



SECRETARIA DE AGRICULTURA,
GANADERIA, DESARROLLO RURAL,
PESCA Y ALIMENTACION

ANIMAL HEALTH GENERAL DEPARTMENT

THE STATE OF NAYARIT REQUEST FOR ITS RECOGNITION AS FREE OF CLASSICAL SWINE FEVER AND VELOGENIC NEWCASTLE DISEASE

JANUARY 2004

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REQUEST FOR THE RECOGNITION OF THE STATE OF NAYARIT FREE OF CLASSICAL SWINE FEVER AND VELOGENIC NEWCASTLE DISEASE-

I.- VETERINARY SERVICE AUTHORITY, ORGANIZATION AND INFRASTRUCTURE

Federal and State Animal Health Authorities are ruled by the following Laws and Mexican Official Standards, as far as swine and poultry diseases are concerned:

Federal Authority

Ley Federal de Metrología y Normalización (The Federal Law of Metrology and Standardization), Chapter III, Articles 52 to 57 (June 30, 1992), and *Decreto por el que se reforman, adicionan y derogan diversas disposiciones de la Ley Federal sobre Metrología y Normalización* (Decree that reforms, adds, and derogates several different stipulations from The Federal Law of Metrology and Standardization (May 20, 1997).

Ley Federal de Sanidad Animal (Animal Health Federal Law), Chapter III, Article (June 18th, 1993).

Norma Oficial Mexicana (Mexican Official Standard) NOM-018-ZOO-1995, *Médicos Veterinarios Aprobados como Unidades de Verificación Facultados para Prestar Servicios Oficiales en Materia Zoosanitaria* (Approved Veterinarians to act as Verification Units, Empowered to provide Animal Health Official Services).

Mexican Official Standard NOM-003-ZOO-1994, *Criterios para la Operación de Laboratorios de Pruebas Aprobados en Materia Zoosanitaria* (Operation of Approved Animal Health Test Laboratories Criteria).

Mexican Official Standard NOM-022-ZOO-1995, *Características y Especificaciones Zoosanitarias para las Instalaciones, Equipo y Operación de Establecimientos que Comercializan Productos Químicos, Farmacéuticos, Biológicos y Alimenticios para Uso en Animales o Consumo por Éstos* (Animal Health Characteristics and Specifications for the Facilities, Equipment, and Operation of Establishments Commercializing Chemical, Pharmaceutical, Biologic, and Feed Products to be Used in or Consumed by Animals).

Mexican Official Standard NOM-012-ZOO-1995, *Especificaciones para la Regulación de Productos Químicos, Farmacéuticos, Biológicos y Alimenticios para Uso en Animales o Consumo por Éstos* (Specifications for the Regulation of Chemical, Pharmaceutical, Biologic, and Feed Products Used in or Consumed by Animals).

Mexican Official Standard NOM-005-ZOO-1993, *Campaña Nacional contra la Salmonelosis Aviar* (The National Poultry Salmonellosis Campaign).

Acuerdo mediante el cual se declara libre de salmonelosis aviar causada por Salmonella pullorum, el territorio de los Estados Unidos Mexicanos (Agreement declaring the Mexican United States territory as free of poultry salmonellosis caused by *Salmonella pullorum*).

Mexican Official Standard NOM-013-ZOO-1994, *Campaña Nacional contra la Enfermedad de Newcastle Presentación Velogénica* (The National Velogenic Newcastle Disease Campaign).

Mexican Official Standard NOM-044-ZOO-1995, *Campaña Nacional contra la Influenza Aviar* (The National Avian Influenza Campaign).

Mexican Emergency Official Standard, NOM-EM-016-2002, National Avian Influenza Campaign.

Mexican Official Standard NOM-007-ZOO-1994, *Campaña Nacional contra la Enfermedad de Aujeszky* (The National Aujeszky's Disease Campaign).

Mexican Official Standard NOM-037-ZOO-1995, *Campaña Nacional contra la Fiebre Porcina Clásica* (National CLASSICAL Swine Fever Campaign).

Mexican Official Standard NOM-047-ZOO-1995, *Requisitos Mínimos para las Vacunas, Bacterinas y Antígenos Empleados en la Prevención y Control de la Salmonelosis Aviar* (Minimum Requirements for Vaccines, Bacterins, and Antigens Used in the Prevention and Control of Poultry Salmonellosis).

Mexican Official Standard NOM-052-ZOO-1995, *Requisitos Mínimos para las Vacunas Empleadas en la Prevención y Control de la Enfermedad de Newcastle* (Minimum Requirements for Vaccines Used in the Prevention and Control of Newcastle Disease).

Mexican Official Standard NOM-036-ZOO-1996, *Requisitos Mínimos para las Vacunas contra la Fiebre Porcina Clásica* (Minimum Requirements for CLASSICAL Swine Fever Vaccines).

Mexican Official Standard NOM-048-ZOO-1996, *Requisitos Mínimos para las Vacunas contra la Enfermedad de Aujeszky* (Minimum Requirements for Aujeszky's Disease Vaccines).

Project for the Mexican Official Standard NOM-055-ZOO-1995, *Requisitos Mínimos para la Elaboración de Vacunas Empleadas en la Prevención, Control y Erradicación de la Influenza Aviar* (Minimum Requirements for the Manufacturing of Vaccines Used in the Prevention, Control, and Eradication of Avian Influenza).

Mexican Official Standard NOM-046-ZOO-1996, *Sistema Nacional de Vigilancia Epidemiológica* (National Epidemiological Surveillance System). Modifications to the Mexican Official Standard NOM-046-ZOO-1996, National Epidemiological Surveillance System).

Agreement triggering *Dispositivo Nacional de Emergencia de Sanidad Animal* (National Animal Health Emergency Operation), under the terms of article 35, *Ley Federal de Sanidad Animal* (Animal Health National Law), published in Diario Oficial de la Federación (Translator's remark: Mexico's equivalent to "The Federal Register"), January 23rd, 1995.

State Authorities

The Federal Law of Metrology and Standardization, Chapter III, Articles 52 to 57 (June 30th, 1992), and the Decree that reforms, adds, and derogates several different stipulations in The Federal Law of Metrology and Standardization (May 20th, 1997).

The Federal Law of Animal Health, Chapter III, Article 4 (June 18th, 1993). Modifications to The Federal Law of Animal Health (June 12th, 2000, and June 1st, 2001).

Ley Ganadera del Estado de Nayarit (State of Nayarit's Livestock Law, Chapter II, Article 6 (July 16th, 1994).

Animal Health Infrastructure

a) Federal Structure

The Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (Ministry of Agriculture, Livestock Production, Rural Development, Fishery, and Food **SAGARPA**), has a State Delegation and one Animal Agriculture Sub-Delegation in Nayarit. The organigram of this structure is shown on Attachment 1.

Veterinary Personnel

Official veterinarians.- The 5 Rural Development Districts (**DDR**) in the State of Nayarit, have 5 official veterinarians/animal husbandry specialists, as part of the **SAGARPA** personnel:

Rural Development District	Veterinary personnel
001.- Santiago Ixcuintla	1
002.- Compostela	1
003.- Ahuacatlan	1
004.- Acaponeta	1
005.- Tepic	1
Total	5

Nine (9) veterinarians and one (1) agronomy engineer work for the Animal Agriculture Sub-Delegation. Among other duties, they are in charge of supervising the compliance with Mexican Official Standards regarding Animal Health Campaigns, as well as full cooperation with the epidemiological surveillance of the diseases currently under sanitary campaigns in the state of Nayarit.

Verifying Veterinarians

Poultry diseases.- In the Mexican territory there are a total of 186 poultry verifying veterinarians distributed mainly in major poultry producing areas. The state of Nayarit has one approved poultry veterinarian.

Swine diseases.- In the Mexican territory there are a total of 53 swine verifying veterinarians. Since the state of Nayarit is officially recognized a state free of disease, it does not have a verifying veterinarian.

On the other hand, the state of Nayarit has 5 inspection units for animal, and animal product/byproduct traffic control. These units operate 24 hours a day, with 30 **SAGARPA** veterinarians in charge of the inspections.

In a similar manner -for animal slaughtering and animal product processing- there are 26 municipal processing plants with their respective inspecting veterinarians. Additionally, there is a privately owned poultry-processing plant in the city of Tepic. Which a private veterinarian supervises. In addition, a **TIF** (Translator's remark: Federal Inspection Type) poultry processing plant will start operations by the end of the year 2002, this plant will have official supervision by a **SAGARPA** veterinarian.

b) State structure

The Agriculture and Livestock Production Ministry, which includes the Subsecretaría de Agricultura y Ganadería (The Subministry of Agriculture and Livestock Production), and the Dirección General de Desarrollo Agropecuario (The General Administration of Animal Agriculture Development) compose the Government structure of the state of Nayarit.

It is important to emphasize that the *Comité de Fomento y Protección Pecuaria* (The Animal Agriculture Promotion and Protection Committee, **CFPP**), plays an essential role within the animal health infrastructure. This committee -through the Agriculture and Livestock Production Ministry, the subcommittees, and in coordination with both the Federal Government and **SAGARPA**- perform all the activities for the success of animal health campaigns in the state. The organigrams of The Agriculture and Livestock Production Ministry, and **CFPP**, are shown in Attachments 2 and 3.

TECHNICAL/PROFESSIONAL SCHOOLS

The state of Nayarit has 7 Bachelor's Technical Livestock and Agriculture Centers, and 46 Technical Livestock and Agriculture Schools.

II.- DISEASE STATUS

The state of Nayarit was declared as being In-Eradication Phase on May 20th, 1996 for CLASSICAL swine fever (**CSF**) disease. On May 13th, 1999 it was further declared as CSF-free. The last outbreak of this particular disease was reported in 1989 in a semi-technologically-managed farm located in Estancia de los López, municipality of Amatlán de Cañas, and in two backyard operations (La Goma, and Aután) in the municipality of San Blas.

Regarding the velogenic presentation of Newcastle Disease (**vND**) and salmonellosis caused by *Salmonella gallinarum* (**SA**), the state of Nayarit was declared as being In-Eradication Phase on November 3rd, 1997. And was further declared as **vND** and **SA** on December 17th, 1999. The last **vND**

outbreak was reported in 1985 in a backyard poultry operation in the municipalities of Santiago Ixcuintla, San Blas, Tuxpan, Ruiz, Rosamorada, and Compostela.

Since the official declaration of Nayarit as a state free of these animal diseases, an ongoing, active/passive epidemiological surveillance program is being maintained (Attachment 4).

III.- VACCINATION STATUS IN THE REGION

vND.- In a similar fashion to the rest of the country, vaccination is performed using both lyophilized and oil emulsion vaccines, as per Section 9, NOM-013-ZOO-1994, The National Velogenic Newcastle Disease Campaign (Attachment 5).

SA.- Since the state of Nayarit is a **SA**-free state, the application of **SA** vaccines and bacterins is forbidden in all kinds of poultry. (Section 10.4, NOM-005-ZOO-1993, The National Poultry Salmonellosis Campaign) (Attachment 6).

CSF.- Once the state of Nayarit was declared a **CSF**-free state, vaccination was withdrawn since March 1996. In addition, no **CSF** vaccines are sold in this state or used by Nayarit's swine industry, as stated in Fraction 6.7, NOM-037-ZOO-1995, The National CLASSICAL Swine Fever Campaign (Attachment 7).

IV.- DISEASE STATUS IN ADJACENT REGIONS

As mentioned above, **vND** vaccination is performed throughout the country. As far as **SA** is concerned, no vaccination is performed in the states of Durango and Sinaloa, since they have been declared **vND** free. (Section 10.2, NOM-005-ZOO-1993, The National Poultry Salmonellosis Campaign). The state of Zacatecas is In-Eradication Phase, thus no vaccination is performed. Jalisco is In-Control Phase for salmonellosis, and the immunization against this particular disease is practiced as indicated in Section 10, NOM-005-ZOO-1993.

The states of Durango and Sinaloa are **CSF** free since 1993 and 1996, respectively. Zacatecas and Jalisco are in the In-Eradication-With-Vaccination Phase.

V.- PHYSICAL SEPARATION OR OTHER BARRIERS FROM HIGHER RISK REGIONS

The state of Nayarit is located North East of the Mexican Republic. In the North its neighboring states are Sinaloa and Durango; in the East Durango and Jalisco; in the South Jalisco; and in the West the Pacific Ocean limits this state. In addition to the ocean, Nayarit has other physical natural barriers such as the Western Sierra Madre, in the East. The Sierra Vallejo, Sierra Zapopan, Sierra Guamuchil, and the Volcanic Transverse Sierra are located South of the state (Attachments 8 and 9).

Concerning the man-made physical barriers, Mexico has the *Sistema Nacional de Cuarentena Agropecuaria* (National System of Animal and Agricultural Quarantine), which includes a large amount of control points for the traffic of animal and animal product.

Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria (The National Agriculture and Food Health, Innocuousness, and Quality Service, **SENASICA**) is constituted by the *Dirección General de Salud Animal* (The General Animal Health Administration **DGSA**), *Dirección General de Sanidad Vegetal* (The General Plant Health Administration), and *Dirección General de Inspección Fitozoosanitaria en Puertos, Aeropuertos y Fronteras* (The General Administration of Phyto-Zoo-Sanitary Inspection in Seaports, Airports, and Borders). The first two administrations **SENASICA** and **DGSA**, are basically in charge of the regulations, while the General Administration of Phyto-Zoo-Sanitary Inspection in Seaports, Airports, and Borders is in charge of the operations. The National System of Animal Agricultural Quarantine, gathers the regulatory and operative functions of these three Administrations (i.e.: Directors' Offices), as the strategic basis for the application of quarantine services, carried out for the protection of national agricultural, forestry, and livestock patrimony. Such services are focused towards preventing the entrance of exotic pests and diseases to the country; contributing with the prevention, control, and eradication of such diseases should they appear; supporting phyto-zoo-sanitary campaigns nationwide; and maintaining zones free of animal and plant pests and diseases.

The National System of Animal Agriculture Quarantine includes both the Internal Quarantine Service and the External Quarantine Services. The Internal Quarantine Service, manages all the activities inherent to preventing the spread of diseases already existing within the national territory, from affected areas into free areas. While the External Quarantine Services focuses on all the activities related to the prevention of disease entrance into the country.

Internal Quarantine Service.- It works as a key element for the success of animal health campaigns. It constitutes the orchestration of an effective quarantine control. The establishment of internal verification points (Translator's remark: Spanish acronym *PVI*) (quarantine units) all along major highways, where animal and animal product inspection is performed, is in compliance with official Standards, therefore guaranteeing that such transportation does not pose animal health hazards.

Inspection points in charge of controlling the in- and out-flow of animals and animal products and byproducts to and from the state of Nayarit are:

NAYARIT		
NAME	LOCATION	PERSONNEL
Pie de la Cuesta	Carret. Amatlán de Cañas Nay.-San Marcos, Jal.	3
San José de Gracia	Carret. Federal 15 Tepic, Nay.-Guadalajara, Jal. Km. 95	6
Plan de Barrancas	Carret. De cuota caseta Plan de Barranca, Jal.	16
Jarretaderas	Carret. Bahía de Banderas-Puerto Vallarta, Jal. Km. 145	7
El Atrancón	Carret. Federal 15 Tepic, Nay.-Mazatlan, Sin. Km. 150	4

In addition, a program for the establishment of quarantine lines has been developed, purposely optimizing resources and focusing resources towards reliable, permanent external quarantine systems. Aiming to provide an adequate inspection capacity, and improved protection in disease-free regions.

External Quarantine Service.- This type of quarantine –also considered the first animal health defense barrier– has the purpose of performing preventive actions towards the avoidance of the entrance of pests and diseases into the countries. In order to accomplish this, compliance with phyto-zoo-sanitary Standards and requirements applicable to animal, plant, and farm products and byproduct imseaports in seaports, airports, and borders is verified.

These quarantine lines include 43 *PVI*'s (Attachment 10), located around regions that include several states, with similar animal health traits, that due to their geographic location, communication/transportation systems, and animal traffic patterns, they exert control over the transportation of animals, and animal products/byproducts.

The quarantine belt (Spanish: "*cordón cuarentenario*") in charge of protecting Mexico's northern states (Nayarit included), includes the following inspection points:

QUARANTINE BELT FOR THE NORTHERN REGION

NAME	LOCATION
La Concha	Km. 960 Carret. Fed. 15, Nayarit/ Sinaloa state limit
Vicente Guerrero	Carret. Fed. 45 Durango-Fresnillo, Zac.
Santa Clara	Carret. Fed. 49 Cuéncame-Durango-Fresnillo, Zac.
Tanque Escondido	Carret. Fed. 45 Saltillo-Zacatecas, Zacatecas/Coahuila state limit.
San Roberto	Km. 130 Carret. Fed. 45 Saltillo-Zacatecas-Coahuila and Monterrey, N.L., San Roberto crossroads.
Caseta No. 21 (Tula)	Carret. 101 Victoria-San Luis Potosí
Antiguo Morelos	Km. 3.5 Carret. 85 Antiguo Morelos- Col. Mante, Tamps.
Caseta No. 30 (Rayón)	Carret. Estatal Manuel-Ebano, S.L.P.
Altamira	Km. 24.5 Carret. 180 Tampico-Estación Manuel, Tamps.

This is carried out by inspectors in seaseaports, airports, and borders. No phyto-zoo-sanitary inspection office exists in Nayarit.

VI.- TRAFFIC CONTROL OF ANIMALS AND ANIMAL PRODUCTS FROM HIGHER RISK REGIONS

The swine and poultry traffic, and their products and byproducts, entering Nayarit from In-Control or In-Eradication zones, are subjected to all restrictions stated in the Mexican Official Standards NOM-037-ZOO-1995, The National CLASSICAL Swine Fever Campaign; Modification to NOM-007-ZOO-1994, The National Aujeszky's Disease Campaign; NOM-013-ZOO-1994, The National Velogenic Newcastle Disease Campaign; NOM-044-ZOO-1995, The National Avian Influenza Campaign; and NOM-005-ZOO-1993, The National Poultry Salmonellosis Campaign.

Physical and documentary inspection is performed in the different traffic control points within the state. In the event that any incoming animals, animal products/byproducts do not fulfill the established requirements to enter Nayarit, such animals or animal products/byproducts are returned back to their point of origin.

VII.- ANIMAL DEMOGRAPHICS, AND ANIMAL MARKETING PRACTICES PREVAILING IN THE REGION

Current Nayarit swine inventory in technologically- and semi technologically-operated farms, is presented in the following table:.

MUNICIPALITY	FARM	NO. OF ANIMALS
Tepic	El Refugio	400
	La Conchita	422
	El Izote	240
	Los Limones	8
	Guadalupe	15
	Rancho Tres Hermanos	50
	San Jorge	100
	El Guineo	20
	San Isidro	26
	Bellavista	10
San Blas	San Juan	800
Santa María del Oro	La Bajada	14
	Gigante	280
	Alpera	465
Ahuacatlán	El Arca	0
	Cerro Blanco	144
	La Querencia	24
	Uzeta	100
	Porcícola Tetitlán	60
	Porcícola Ahuacatlán	162
	El Cura	0
	Copales	0
	El Llano	17
	Santa Cecilia	121
Ixtlán del Río	San Isidro	190
Amatlán de Cañas	Los Laureles	80
Compostela	Las Canoas	19
	Las Betas	60
	Hermanos Monroy	50
	San José	14
	El Caimanero	33
	Milpillas	10
	La Cañada	18
	La Cañada 1	8
Bahía de Banderas	Tescalame	55
	Rancho Hnos. Ramírez	5
	Rancho Hnos. Moreno	10
	San Juan de Abajo	9
	CBTA No. 72	22
Rosamorada	San Antonio	70
Acaponeta	El Naranjito	20
	Emiliano	40
TOTAL		4,191

The backyard operations swine inventory is presented in the following table:

MUNICIPALITY	TOTAL SITES	TOTAL BACKYARD POPULATION
TEPIC	228	2,151
XALISCO	162	1,571
EL NAYAR	380	383
SAN BLAS	195	769
STA. MARIA DEL ORO	185	1,497
AHUACATLAN	164	1,498
JALA	168	1,497
IXTLAN DEL RIO	164	2,995
AMATLAN DE CAÑAS	172	2,996
LA YESCA	212	1,136
COMPOSTELA	224	1,497
BAHIA DE BANDERAS	181	1,497
SAN PEDRO LAGUILLAS	153	1,497
SANTIAGO IXCUINTLA	220	1,714
TUXPAN	152	1,288
RUIZ	182	1,293
ROSAMORADA	189	1,371
TECUALA	187	1,291
ACAPONETA	217	1,334
HUAJICORI	242	731
TOTAL	3,977	30,006

Currently, the state of Nayarit has a total technologically-operated poultry population of 3,412,500 birds. The per-municipality/per-husbandry and purpose distribution of the poultry population in this state is presented in the following table:

Municipality	Farm	Husbandry Purpose	No. of Birds
Tepic	La Conchita	Broilers	120,000
	Palomas	Broilers	92,000
	El Izote	Broilers	40,000
	Lo de Lamedo	Broilers	85,000
	Lamedo	Broilers	100,000
	Guzmana 1	Broilers	84,000
	Guzmana 2	Broilers	112,000
	Guzmana 3	Broilers	112,000
	El Avión	Layers	240,000
	Agua Zarca 1	Broilers	112,000
	Agua Zarca 2	Broilers	112,000
	Agua Zarca 3	Broilers	112,000
	Polka 1	Broilers	84,000
	Polka 2	Broilers	84,000
	Polka 3	Broilers	84,000
	Polka 4	Broilers	84,000
	Palomas 1	Broilers	112,000
	Palomas 2	Broilers	112,000
	Palomas 3	Broilers	112,000
	Matriz	Broilers	30,000
	Armadillo	Broilers	84,000
	Maravillas	Broilers	126,000
	Ventarrón	Broilers	84,000
	Guayabo	Layers	100,000
Xalisco	San José	Breeders	4000
Santa María del Oro	Zapotanita 1	Breeders	26,500
	Zapotanita 2	Breeders	19,000
	Zapotanita 3	Breeders	22,000
	Zapotanita 4	Breeders	24,000
	Alpera	Broilers	60,000
	El Arca	Broilers	114,000
	Rosalina	Layers	300,000
	El Limón	Broilers	40,000
	Santa Cecilia	Layers	50,000
	Santa María	Layers	50,000
	Santa Mónica	Layers	50,000
Ahuacatlán	Copales	Broilers	150,000
	El Cura	Broilers	67,000
Compostela	Paso Atascoso	Breeders	19,000
TOTAL			3,412,500

Farm Type	1999	2000	2001
Integrated technology	1,947	1,806	2,293
No technology	1,495	1,675	1,665
Total	3,267	3,061	3,938

CSF surveillance in Nayarit for 1999, 2000, and 2001 is shown in the following chart:

Farm Type	1999	2000	2001
Integrated technology	1,781	1,596	2,293
No technology	1,495	1,495	1,645
Total	3,492	3,061	3,758

All samples collected in this study were processed in *Centro Nacional de Servicios de Diagnóstico en Salud Animal* (National Animal Health Diagnostic Service Center, **CENASA**), at Tecamac, State of México. All results were negative for CSF.

There are five official techniques for the diagnosis of CSF: Immunoperoxidase, ELISA, serum neutralization, virus isolation, and –in the event of an outbreak– immunofluorescence (Section 8, NOM-037-ZOO-1995, The National CLASSICAL Swine Fever Campaign).

It must be mentioned, that both In-erradication and in CSF-Free zones, serum samples are obtained for immunoperoxidase, ELISA, serum neutralization, and virus isolation in an attempt to detect any evidence of CSF. Final/confirmative diagnosis is based on the identification of viral antigen, by direct immunofluorescence, using tonsil, spleen, and lymph node samples; as well as by indirect immunofluorescence using tonsil, spleen lymph node, and kidney samples (Sections 7.3.1 and 8 NOM-037-ZOO-1995, The National CLASSICAL Swine Fever Campaign).

a) Velogenic Newcastle Disease and Poultry Salmonellosis

The statistical sample size for vND and SA epidemiological surveillance in Nayarit for 1999, 2000, 2001, 2002 and 2003, is shown in the following chart (Attachment 11):

Farm type	1999	2000	2001
Integrated technology	1,947	1,947	2,551
No technology	1,495	1,675	1,675
Total	3,442	3,622	4,226

The state of Nayarit has the following backyard operation poultry inventory:

Municipality	Total sites	Total backyard population
Tepic	228	42000
Xalisco	162	9200
El Nayar	380	6200
San Blas	195	19000
Sta. María del Oro	185	14500
Ahuacatlan	164	10000
Jala	168	6500
Ixtlán del Río	164	13000
Amatlan De Cañas	172	9000
La Yesca	212	6000
Compostela	224	19200
Bahía de Banderas	181	16000
San Pedro Laguillas	153	2000
Santiago Ixcuintla	220	15000
Tuxpan	152	6500
Ruiz	182	9000
Rosamorada	189	13500
Tecuala	187	20000
Acaponeta	217	23000
Huajicori	242	14300
TOTAL	3,977	273,900

VIII.- TYPE AND SCOPE OF THE SURVEILLANCE IN THE REGION

Active Surveillance

b) CLASSICAL swine fever

Epidemiological surveillance of **CSF** in the state of Nayarit consists of routine sampling among the commercial swine industry and backyard operations. Sample size is determined by **SENASICA's DGSA**:

Sample size for epidemiological surveillance of **CSF** in Nayarit for 1999, 2000, 2001, 2002 and 2003, was as follows (Attachment 12):

ND surveillance in Nayarit for 1999, 2000, and 2001 is shown in the following chart:

Farm type	1999	2000	2001
Integrated technology	2,040	2,040	1,933
No technology	1,495	1,495	1,420
Total	3,535	3,535	3,353

* 2001 monitoring in farms with technology was not fully accomplished, since 5 farms had been depopulated.

All samples from the state of Nayarit were submitted to **CENASA** for diagnosis, which proved negative for all of them.

All samples (vND, SA, and CSF) were negative to the presence of these diseases.

Passive surveillance

There are two official publications that act as legal basis for this activity:

An "Agreement to list all mandatory reportable exotic and enzootic diseases and pests" exists in Mexico since 1994. This agreement was modified on March 5th, 1999. It establishes three animal disease groups depending on their characteristics. These diseases must be reported to the Animal Health Authorities in Mexico. **Group one** includes **exotic diseases** that do not exist within the national territory, and due to their rapid dissemination and/or economic impact for the animals and risk for public health, are considered for **mandatory immediate report**. **Group two** includes transmissible **enzootic diseases** that exist already in the national territory, and due to their strategic importance for Mexico's animal health actions, and their significant effects on livestock production, international trade, and human health, are of mandatory immediate report. This group includes **CSF**. **Group three** includes those **diseases** that already exist within the national territory, and that are considered as **enzootic**, but represent a lower risk level for the epidemiological, economic, public health, and national and international trade. They are of **mandatory monthly report**.

Additionally, the Mexican Official Standard NOM-046-ZOO-1996, *Sistema Nacional de Vigilancia Epizootiológica* (The National Epizootiologic Surveillance System), defines the mandatory people and entities involved in the report of diseases. It establishes the guidelines for submitting the information at a central level, to be processed and analyzed by The National Epizootiological Surveillance System (**SIVE**).

The **SIVE** submits monthly/yearly reports to the *Officine International des Epizootics (OIE)*, weekly reports to **SAGARPA's** State Delegations, the Pan-American Health Organization (Translator's remark: Spanish acronym **OPS**), *Instituto Interamericano de Cooperación para la Agricultura* (The Inter-American Institute for Agricultural Cooperation, **IICA**), and *Organismo Internacional Regional de Sanidad Agropecuaria* (International Regional Organization for Agricultural Health, **OIRSA**).

When a case of **CSF** is detected on a farm, or when a positive result is obtained through either serological tests or virus isolation in a laboratory. The animal owner, and the approved/responsible veterinarian in the farm or laboratory, are responsible for the immediate report to **SAGARPA**.

IX.-CAPACITY AND SCOPE OF DIAGNOSTIC LABORATORIES

The state of Nayarit has one animal health diagnostic laboratory which performs routine diagnosis (virological, hematological and bacteriological studies).

The High Security Laboratory, Mexico-US Commission for the Prevention of Foot and Mouth Disease and other Exotic Diseases of Animals (**CPA**) is a reference laboratory for the surveillance in disease-free zones. Therefore, **CPA** and **CENASA** can confirm the diagnoses issued by other laboratories.

All laboratories approved for the diagnosis of poultry and swine diseases under official campaign, submit a report starting at the time of suspicion and/or confirmation of an outbreak. These laboratories are members of the National Epidemiological Surveillance System. **SA/vND**-approved laboratories and are listed in the following chart:

SA/vND-approved laboratories

LABORATORY	LOCATION
Patología Diagnóstica del Centro Agropecuario UAAGS ⁽¹⁾ Diagnostic Pathology, Agricultural Center, The Autonomous University of Aguascalientes.	Aguascalientes, Aguascalientes
Laboratorio de Patología de TECAA de Ags. Aguascalientes TECAA Pathology Laboratory	Aguascalientes, Aguascalientes
Laboratorio de Diagnóstico Villaflores Villaflores Diagnostic Laboratory	Villaflores, Chiapas
Laboratorio de Patología Aviar Poultry Pathology Laboratory	Torreón, Coahuila
Diagnósticos Clínicos Veterinarios (Company Name)	Distrito Federal (Mexico City)
Lab. del Depto. Prod. Animal Aves, FMVZ, UNAM Poultry Diagnostic Laboratory, Faculty of Veterinary Medicine, The National Autonomous University of Mexico.	Distrito Federal (Mexico City)
Diagnóstico Animal del CENID Microbiología Vet. Animal Diagnosis, CENID, Veterinary Microbiology.	Distrito Federal (Mexico City)
Centro de Análisis e Investigación Pecuaria de la Laguna (Company Name)	Gómez Palacio, Durango
Laboratorio de Biología de Nochistongo (Company Name)	Gómez Palacio, Durango
Laboratorio Provemex Avícola, S.A. de C.V. (Company Name)	Gómez Palacio, Durango
Laboratorio SPR Productores Avipecuarios (Company Name)	Chalco, Edo. de México
Laboratorio de Patología Bachoco, S.A. de C.V. (Company Name)	Celaya, Guanajuato
Centro de Salud Animal "El Salto" ⁽¹⁾ El Salto Animal Health Center	Tlaquepaque, Jalisco
Laboratorio de Diagnóstico Sanfandila, S.A. de C.V. (Company Name)	Lagos de Moreno, Jalisco
Laboratorio de Investigación Pecuaria y Patología, S.A. de C. (Company Name)	Tepatitlán, Jalisco
Biofarma División Diagnósticos (Company Name)	San Nicolás de los Garza, N.L.

Laboratorio Central Regional de Monterrey Monterrey Regional Central Laboratory	Guadalupe, Nuevo León
Laboratorio de Control de Calidad y Patología Aviar (Company Name)	Salinas Victoria, Nuevo León
Laboratorio de Patología Aviar Poultry Pathology Laboratory	Monterrey, Nuevo León
Biotechnología Vet. de Puebla, S.A. de C.V. (Company Name)	Tehuacán, Puebla
Laboratorio de Diagnóstico Especializado (Company Name)	Tehuacán, Puebla
Laboratorio de Investigación Aplicada (Company Name)	Tehuacán, Puebla
Laboratorio de Patología Animal de Calamanda Calamanda's Animal Pathology Laboratory	Calamanda, Querétaro
Centro de Salud Animal ⁽¹⁾ Animal Health Center	San Luis Potosí, S.L.P.
Pecuarius Laboratorios S.A. de C.V. (Company Name)	Ciudad Obregón, Sonora
Lab. Diagnóstico de la FMVZ, UAT ⁽¹⁾ Diagnostic Laboratory, Faculty of Veterinary Medicine, Autonomous University of Tamaulipas.	Ciudad Victoria, Tamaulipas
Laboratorio Cordobés (Company Name)	Córdoba, Veracruz
Laboratorio Central Regional de Mérida Merida's Regional Central Laboratory	Mérida, Yucatán
Laboratorio de Diagnóstico y Control de Calidad Sanjor (Company Name)	Mérida, Yucatán
Laboratorio de Diagnóstico Avícola Fernández (Company Name)	Mérida, Yucatán
Nutrimentos Dorantes, S.A. de C.V. (Company Name)	Mérida, Yucatán

(1) Approved only for Poultry Salmonellosis (SA).

Classical Swine Fever-approved laboratories

LABORATORY	LOCATION
Diagnóstico Especializado del CENID Microbiología Veterinaria Specialized diagnosis, CENID Veterinary Microbiology	Distrito Federal Mexico City
Centro de Análisis e Investigación Pecuaria de la Laguna La Laguna Animal Analysis/Research Center	Durango
Laboratorio de Diagnóstico Especializado Specialized Diagnostic Laboratory	Guanajuato
Centro de Salud Animal "El Salto" EL Salto Animal Health Center	Jalisco
Laboratorio de Investigación Pecuaria y Patología Animal Pathology Research Laboratory	Jalisco
Laboratorio de Diagnóstico Sanfandila, S.A. de C.V. (Company Name)	Jalisco
Laboratorio de Diagnóstico Especializado de la Piedad La Piedad Specialized Diagnostic Laboratory	Michoacán
Laboratorio Central Regional de Monterrey Monterrey Regional Central Laboratory	Nuevo León
Laboratorio de Diagnóstico Especializado de Tehuacán Tehuacán Specialized Diagnostic Laboratory	Puebla
Laboratorio de Investigación Aplicada, S.A. de C.V. (Company Name)	Puebla
Laboratorio de Patología Animal de Calamanda Calamanda Animal Pathology Laboratory	Querétaro
Laboratorio de Diagnóstico Especializado de Culiacán Culiacán Specialized Diagnostic Laboratory	Sinaloa
Pecuarius Laboratorios, S.A. de C.V. (Company Name)	Sonora
Laboratorio de Diagnóstico de la FMVZ-UAT	Tamaulipas

Diagnostic Laboratory, Faculty of Veterinary Medicine,
Autonomous University of Tamaulipas

Laboratorio Cordobés
Company Name

Veracruz

Laboratorio Central Regional de Mérida
Merida Regional Central Laboratory

Yucatán

X.- RESPONSE CAPACITY IN THE EVENT OF AN EMERGENCY

It is important to mention that in a specific disease free state, these diseases are considered exotic. A subsystem for the surveillance of exotic diseases has been implemented in Mexico. This subsystem is operated by the Mexico-US Commission for the Prevention of Foot and Mouth Disease and Other Animal Exotic Diseases (**CPA**), **DGSA**, **SAGARPA**.

CPA has qualified personnel; a high security diagnostic laboratory; and an informatics and data processing/analysis system. This enables **CENAPA** to perform surveillance activities and to take care of problems in case of a suspected exotic disease outbreak. It also publishes information and performs educational and training activities.

This way, **CPA** maintains constant presence throughout the country, carrying out preventive activities for exotic diseases at all three animal health levels, i.e.:

First defense barrier.- Includes the maintenance of a worldwide disease incidence database, based on the information issued by **OIE**, and other publications. With the purpose of keeping all involved entities updated about the behavior of exotic diseases in other countries. It is also a consultant for **DGSA** and provides information about all potential hazards derived from the import of animals and products, and trains **DIGIF**'s phyto-zoo-sanitary safety officials about technical/quarantine aspects.

Second defense barrier.- Includes all the epidemiological surveillance, problem solving in case of exotic disease suspicion, and information/training activities. Within this structure there are 5 Animal Health Regional Administrations, 8 Regional Coordinators, and 65 Zone Coordinators, strategically located throughout the country. On the other hand, **CPA** has developed educational and training aids and courses on the importance of exotic diseases and the key role of early detection. Students in the last two semesters of Veterinary medicine Schools and Faculties throughout the country attend these training courses.

Additionally, **DGSA** through **SIVE**, is in charge of the epidemiological surveillance of those the states that have been declared disease-free under the stipulations of the campaign, through the establishment and supervision of routine sampling. The routine sampling must be performed continually/permanently, in each case.

Third defense barrier.- In case of the detection of a positive outbreak of an exotic disease, the *Dispositivo Nacional de Emergencia de Sanidad Animal* (The National Animal Health Emergency Operation, **DINESA**) is activated, whose main function is the disease control and its eradication.

In the event of an outbreak in a farm or a positive bacteriological isolation of *S. pullorum* and/or *S. gallinarum*, or virus isolation of **vND/CSF**, the animal owner as well as the approved/responsible veterinarian in charge of the farm or laboratory (as it might correspond), will have the mandatory obligation of immediately reporting the case to **SAGARPA** (Section 13.1, NOM-013-ZOO-1994, The National Velogenic Newcastle Disease Campaign; Section 14.2, NOM-005-ZOO-1993, The National Poultry Salmonellosis Campaign; Section 7.1, NOM-046-ZOO-1995, The National Epizootiologic Surveillance System).

DINESA is constituted by *Grupos Estatales de Emergencia en Salud Animal* (State Groups of Animal Health Emergency, **GEESAs**). A **GEESA** includes specialized technical personnel, highly experienced on animal health and outbreak control. For a **GEESA** to be constituted, a simulacrum course on exotic diseases is presented to veterinarians and other animal health-related professionals, previously selected within the state. The next phase is the second course. All veterinarians that showed great organization, leadership, and sound decision-making skills under pressure in course one, are selected for the attendance to course two for further training.

The task of a **GEESA** is to exert a rapid, efficacious, organized reaction in the event of any animal health emergency. Thirty one (31) state groups have been constituted so far, with 1,646 members throughout the country. Nayarit's **GEESA** was constituted in 1994, with 25 veterinarians. These veterinarians work for different government or private institutions.

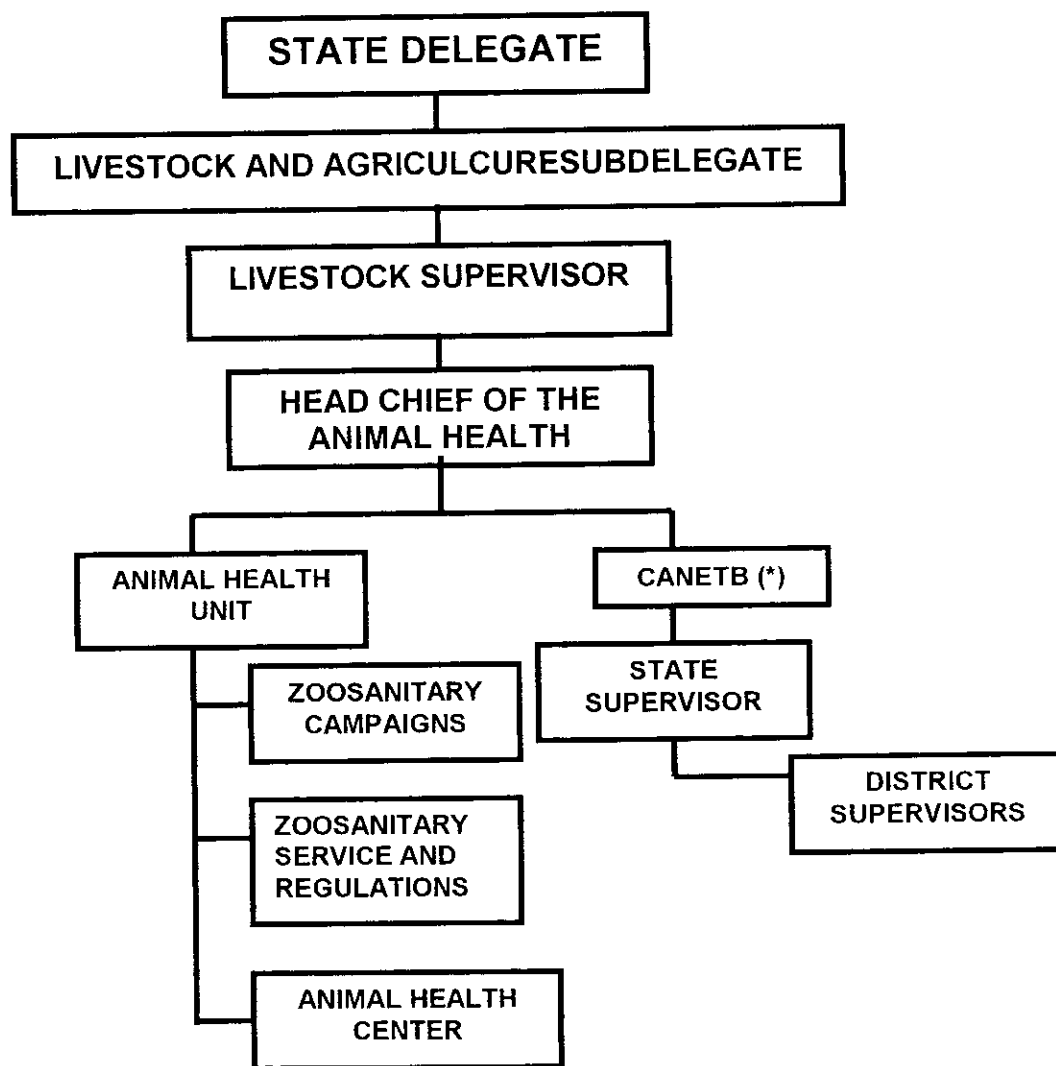
ATTACHMENTS

- 1.- SAGARPA Federal Structure in the State of Nayarit.
- 2.- State of Nayarit Government Structure Organigram.
- 3.- State of Nayarit Committee for Livestock Protection and Promotion Cooperative Society.
4. Copy of the Diario Oficial de la Federacion Declaring the State of Nayarit as Free of Classical Swine Fever, Newcastle Disease and Avian Salmonellosis.
5. Copy of the Mexican Regulatory Standard NOM-013-ZOO-1994, The National Campaign Against Newcastle Disease.
6. Copy of the Mexican Regulatory Standard NOM-005-ZOO-1993, The National Campaign Against Poultry Salmonellosis.
7. Copy of the Official Mexican Standard NOM-037-ZOO-1995, The National Classical Swine Fever Campaign.
8. Geographic Location of the State of Nayarit in the Mexican Republic.
9. Map of the Rural Development Districts DDR in the State of Nayarit.
10. Phyto and Zoosanitary Regional Quarantine Lines.
11. Statistical Sample Size for Technologically managed Poultry Farms and Backyard Poultry Production Units in the State of Nayarit, 1999-2003.
12. Statistical Sample Size for Technologically managed Swine Farms and Backyard Swine Production Units in the State of Nayarit, 1999-2003

ATTACHMENT 1

ATTACHMENT 1

SAGARPA FEDERAL STRUCTURE IN THE STATE OF NAYARIT

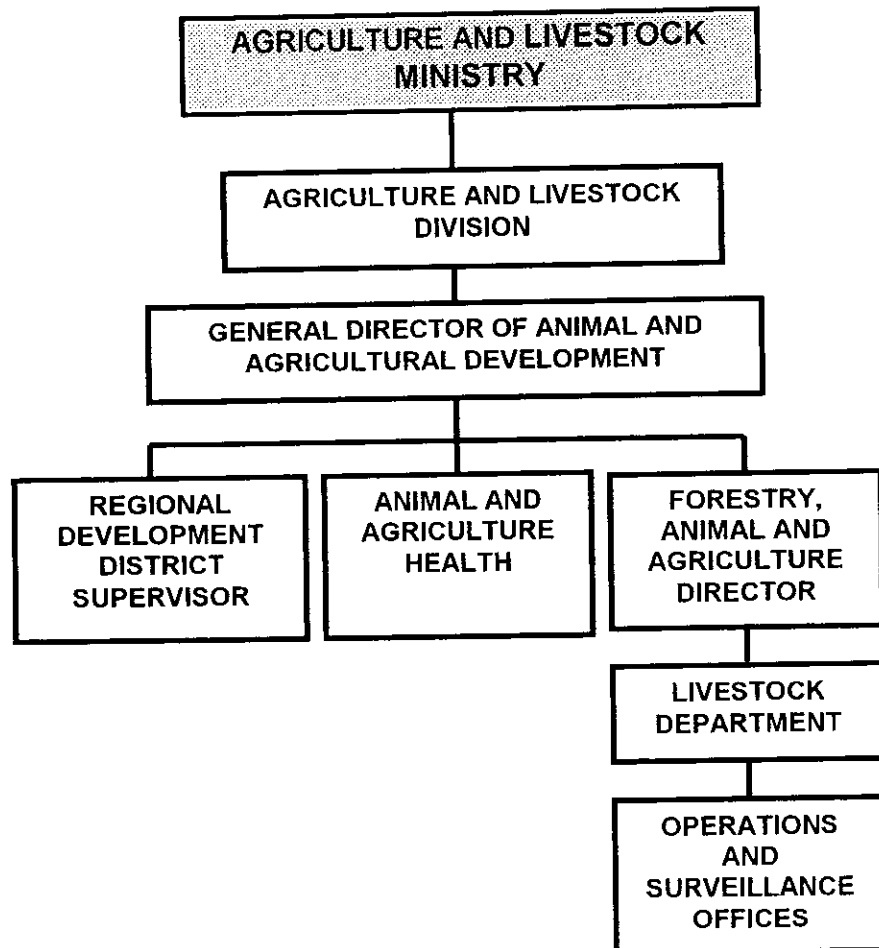


(*) CANETB: Mexico-USA Commission for the prevention of Foot and mouth Disease and other Exotic diseases.

ATTACHMENT 2

ATTACHMENT 2

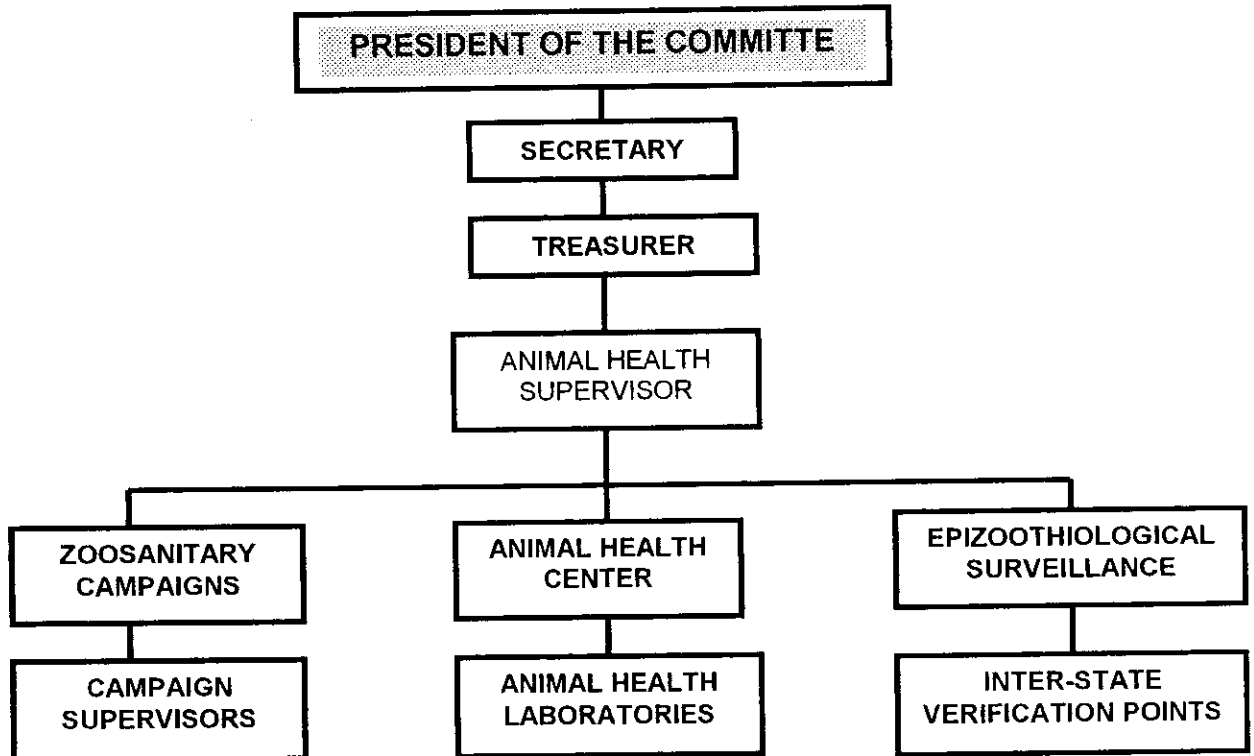
STATE OF NAYARIT GOVERNMENT STRUCTURE ORGANIGRAM



ATTACHMENT 3

ATTACHMENT 3

STATE OF NAYARIT COMMITTEE FOR LIVESTOCK PROTECTION AND
PROMOTION COOPERATIVE SOCIETY



ATTACHMENT 4

ATTACHMENT 4

Thursday May 13th, 1999

DIARIO OFICIAL (Federal Official Register)

{First Session}

27

AGREEMENT that declares the state of Nayarit territory as free of **CLASSICAL swine fever**

At the margin a seal with the National Emblem, that says: **Mexican United States. The Ministry of Agriculture, Livestock Production, Rural Development., Fisheries and Food**

FRANCISCO J. GURRIA TREVIÑO, *Subsecretario de Agricultura y Ganadería* (Assistant Minister of Agriculture and Livestock Production), *Secretaría de Agricultura, Ganadería y Desarrollo Rural* (The Ministry of Agriculture, Livestock Production, and Rural Development), based on articles 35 fraction IV, *Ley Orgánica de la Administración Pública Federal* (Internal Organic Law of the Federal Public Administration); 1st, 3rd, 4th fraction IV, 14, 31, 32, and 4th transient of *Ley Federal de Sanidad Animal* (The Federal Law of Animal Health); 1st and 32nd *Reglamento para Campañas de Sanidad Animal* (Animal Health Campaign Regulations); 1st., 2nd. Fractions IV and XXI; and 7th fractions IX and X *Reglamento Interior de esta dependencia del Ejecutivo Federal* (Internal Regulations of this Federal institution); regarding articles 47 fractions XXIX and XXXIII, and 50 fractions VI and IX of the same regulation, and article 2 fraction II, *Acuerdo de Adscripción de las Unidades Administrativas* (Ascription Agreement of Administrative Units), published on October 2, 1997 in *Diario Oficial de la Federación*; and based on the Mexican Official Standard NOM-037-ZOO-1995, The National CLASSICAL Swine Fever Campaign; hereby issues the following

WHEREAS

On October 29th, 1996 the *Diario Oficial de la Federación* published the Mexican Official Standard NOM-037-ZOO-1995, The National CLASSICAL Swine Fever (CSF) Campaign to be observed as mandatory throughout the national territory, and established the operative procedures, activities, criteria, strategies, and techniques for the prevention, control, and eradication of CSF.

The Federal Government, in coordination with the Free, Sovereign State of Nayarit, together with Nayarit swine producers have developed and executed actions for the diagnosis, control, eradication, and epidemiological surveillance of CSF. They have complied with the control, eradication, and free phases referred to in NOM-037-ZOO 1995, based on the above-mentioned

considerations allowing for the results to be evaluated, consistent with the objectives and procedures established by such Mexican Official Standard.

In agreement with technical data from the animal health actions performed in the Free, Sovereign State of Nayarit, it is confirmed that effective surveillance and epidemiological actions have been performed. Also, **CSF** was not detected on any swine serum samples both from high technology farms and medium technology farms, as well as serum samples from backyard operations for swine production in the municipalities of Nayarit, and that the analysis of all samples from farms and backyard units in the state of Nayarit, processed by *Centro Nacional de Servicios de Diagnóstico en Salud Animal* (The National Animal Health Diagnostic Service Center, **CENASA**), *Comisión Nacional de Sanidad Agropecuaria* (The National Agricultural Health Commission), have yielded negative results to the presence of CLASSICAL swine fever virus. Therefore, it has been decided to issue the following:

AGREEMENT

ARTICLE ONE.- The territory of the Free, Sovereign State of Nayarit is declared Free of the CLASSICAL Swine Fever disease:.

ARTICLE TWO.- In order for the Free, Sovereign State of Nayarit to remain free of **CSF**, all preventative measures regarding transportation, traffic, and trade of swine, and swine products and byproducts from In-Control/In-eradication phase zones, must continue to be observed in Nayarit.

TRANSIENT ARTICLE

SINGLE TRANSIENT ARTICLE.- This agreement shall begin its enforcement the following day of its publication in *Diario Oficial de la Federación*.

Granted in Mexico City, The Federal District, on April twenty first, nineteen ninety nine.- The Undersecretary of Agriculture and Livestock Production, **Francisco J. Gurriá Treviño**.- Signature.

AGREEMENT that declares the state of Nayarit territory free of Poultry Salmonellosis and Newcastle Disease in its Velogenic presentation

At the margin a seal with the National Emblem, that says: Mexican United States. The Ministry of Agriculture, Livestock Production, Rural Development., Fisheries and Food.

FRANCISCO J. GURRIA TREVIÑO, *Subsecretario de Agricultura, Ganadería y Desarrollo Rural* (Minister of Agriculture, Livestock Production, and Rural Development), based on articles 35 fraction IV, *Ley Orgánica de la Administración Pública Federal* (Federal Public Administration Internal Law); 1st, 3rd, 4th, fraction IV; 14, 31, 32, and 4th transient of *Ley Federal de Sanidad Animal* (Animal Health Federal Law); 1st and 32nd *Reglamento para Campañas de Sanidad Animal* (Animal Health Campaign Regulations); 1st, 2nd, fractions IV and XXI, and 7th fractions IX and X *Reglamento Interior de esta dependencia del Ejecutivo Federal* (Internal Regulations of this Federal institution); regarding articles 47 fractions XXIX and XXXIII; and 50 fractions VI and IX of the same regulation, and article 2 fraction II, *Acuerdo de Adscripción de las Unidades Administrativas* (Ascription Agreement of Administrative Units), published on October 2nd, 1997 in *Diario Oficial de la Federación*; and on the basis of Mexican Official Standards NOM-005-ZOO-1993, The National Poultry Salmonellosis Campaign, and NOM-013-ZOO-1994, Newcastle Disease Campaign; hereby issues the following:

WHEREAS

On September 1st, 1994, and on February 10th, 1995 the *Diario Oficial de la Federación* published the Mexican Official Standard NOM-005-ZOO-1993, The National Poultry Salmonellosis Campaign, and a clarification of such Standard, respectively; and that on February 28th and on March 30th, 1995 the *Diario Oficial de la Federación* published the NOM-013-ZOO-1994 The National Newcastle Disease Campaign, and a clarification of such Standard, respectively, to be observed as mandatory throughout the national territory, and established the operative procedures, activities, criteria, strategies, and techniques for the prevention, control, and eradication of such diseases.

The Federal Government, in coordination with the Free, Sovereign State of Nayarit, together with Nayarit poultry producers have developed and executed actions for the diagnosis, control, eradication, and epidemiological surveillance of Poultry Salmonellosis, and velogenic Newcastle disease. Allowing for the results of such measures to be evaluated, consistent with the objectives and

procedures established by the Mexican Official Standards forementioned in the paragraph above.

In agreement with technical data from the animal health activities performed in the state of Nayarit, it is confirmed that both effective surveillance and epidemiological control have been performed through organ sampling and bacteriological/virological analyses. These samples have been obtained from farm and backyard birds within the state of Nayarit. Sample analysis was performed by *Centro Nacional de Servicios de Diagnóstico en Salud Animal* (The National Animal Health Diagnostic Service Center, **CENASA**), for the isolation and identification of the causative agents of such diseases both in commercial poultry and in backyard operations for the production of poultry. All results proved negative. No bacteriological or virological evidence was found of these diseases, therefore confirming the absence of Poultry Salmonellosis and Newcastle Disease in its velogenic presentation. Therefore, I have decided to issue this:

AGREEMENT

ARTICLE ONE.- The territory of the Free, Sovereign State of Nayarit is declared free of Poultry Salmonellosis and Newcastle Disease in its velogenic presentation.

ARTICLE TWO.- For the Free, Sovereign State of Nayarit to remain free of these diseases, all preventative measures regarding transportation, traffic, and trade of poultry, poultry products and byproducts from In-Control/In-Eradication phase zones, must continue to be observed in Nayarit.

TRANSIENT ARTICLE

SINGLE TRANSIENT ARTICLE.- This agreement shall begin its enforcement the following day of its publication in the *Diario Oficial de la Federación*.

Granted in Mexico City, The Federal District, on October twenty nine, nineteen ninety nine.- The Undersecretary of Agriculture, Livestock Production, and Rural Development, **Francisco J. Gurriá Treviño**.- Signature.

<http://pcinegi.udlap.mx/diario1999/diciembre/17dic99/17DIC99.DOC>

**The Ministry of Agriculture, Livestock Production, Rural
Development, Fisheries and Food**

**Agreement that declares the territory of Mexican United States free
of avian salmonellosis caused by *Salmonella pullorum*.**

At the margin a seal with the National Emblem, that says: Mexican United States. The Ministry of Agriculture, Livestock Production, Rural Development., Fisheries and Food.

JAVIER BERNARDO USABIAGA ARROYO, Minister of Agriculture, Livestock, Rural Development, Fisheries and Food, based on articles 26 and 35 section IV of the Federal Public Administration Organic Law; 1st, 3rd, 4th section IV, 14, 31 and 32 of the Animal Health Federal Act; 49 sections II, IV, V and VI of the Internal Regulations of the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food, and the established on section 6.3.4 of the Mexican Official Standard NOM-005-ZOO-1993, National Campaign against Avian Salmonellosis, hereby issues the following:

WHEREAS

That in agreement with the published Federal Official Registry (Diario Oficial de la Federación) of March 25th 1980, the National Campaign against Avian Salmonellosis was established in all the national territory on an obligatory basis.

That in agreement with the published Federal Official Registry (Diario Oficial de la Federación) of March 12th 1992, the modifications to the program of such Campaign were established.

That on September 1st, 1994, it was published in the Federal Official Registry (Diario Oficial de la Federación) the Mexican Official Standard NOM-005-ZOO-1993, National Campaign against Avian Salmonellosis and, on February 10th, 1995, a modification of the aforementioned Standard was published. Declaring that in all the national territory this Standard must be followed in an obligatory, general and permanent basis. It also established all the procedures, activities, criteria, strategies and operative techniques for the prevention, control and eradication.

That since 1989, there has not been a single culture isolation of *Salmonella pullorum* the causative agent of avian salmonellosis. And that the Federal Government, in coordination with State Governments and the poultry producers in the country, have developed and executed activities for the diagnosis, control and eradication, as well as active and passive

epidemiological surveillance. The results of the aforementioned activities can now be evaluated in conformance with the objectives and procedures established on the Mexican Official Standard mentioned.

That in agreement with the technical data on the sanitary activities performed, it is confirmed that an effective epidemiological surveillance and control activities, through the sampling of technified poultry operations as well as backyard poultry producing operations countrywide of serum and organs, processed at the Diagnostic and Animal Health Services National Center (CENASA), as well as other diagnostic laboratories approved by the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food, for the diagnosis of avian salmonellosis, no bacteriological evidence was found. This situation confirms the absence of *Salmonella pullorum* in the national territory, hereby I have seen fit to issue the following:

RESOLUTION

FIRST ARTICLE.- The territory of the United Mexican States is declared free of *Salmonella pullorum*.

SECOND ARTICLE.- In order to maintain the Mexican United States free of Avian Salmonellosis caused by *Salmonella pullorum*, the preventive measures for transportation, traffic and marketing of poultry, products and byproducts of avian origin stated on the Mexican Official Standard aforementioned will continue to be observed.

Friday, May 17th 2002 DIARIO OFICIAL (Federal Official Register) -First Section-52

TRANSITORY

SINGLE TRANSIENT ARTICLE.- This agreement will begin its enforcement the following day of its publication in the *Diario Oficial de la Federación* (Federal Official Register).

Granted in Mexico City, The Federal District, on May eight, two thousand and two.-The Minister of Agriculture, Livestock Production, and Rural Development, Fisheries and Food, **Javier Bernardo Usabiaga Arroyo.-** Signature.

ATTACHMENT 5

MINISTRY OF AGRICULTURE, LIVESTOCK AND RURAL DEVELOPMENT

Mexican Regulatory Standard NOM-013-ZOO-1994 National Campaign against Newcastle Disease.

At the margin a seal with the National Emblem, that says: Mexican United States.-
Ministry of Agriculture, Livestock and Rural Development.

The Ministry of Agriculture Livestock and Rural Development, under the articles: 1st, 3rd, 4th fraction III, 12th, 13th, 21st, 22nd, 31st, 32nd and 33rd of the Federal Animal Health Act; 1st, 38th fraction II, 40th, 41st, 43rd, 47th fraction IV of the Federal Weights, Measures and Standards Act; 35th fraction IV of the Federal Public Administration Organic Law; 10th fraction V of the Ministry of Agriculture and Water Resources' Internal Act; and

CONSIDERING

That under the Federal Animal Health Act, it is, amongst others, a function of the Ministry of Agriculture, Livestock and Rural Development to organize and administrate the services of livestock defense, and animal health surveillance, as well as to prevent, control, and eradicate diseases and harmful pests that impair the national livestock and avian industries, such as the Newcastle Disease.

That the Newcastle Disease (ND) is a lethal, contagious viral disease that affects domestic and wild birds, causing high morbidity and mortality in the same.

That the virus of ND is divided according to its pathogenicity and virulence in lentogenic (low pathogenicity), mesogenic (moderate pathogenicity) and velogenic (high pathogenicity) these latter ones are those that produce a serious sanitary and commercialization problem in the national avian industry.

That in order to increase and improve the sanitary quality of avian products it is necessary to establish a strict control on the Newcastle Disease, vying for its eradication in order to allow the national poultry industry to develop in better sanitary conditions.

That to comply with the objectives hereinbefore stated, that are of an obvious public and social interest, it is necessary to establish a general, obligatory and permanent campaign to prevent, control and eradicate the Newcastle Disease in birds, and in this manner, look for the support and collaboration of all sectors in the country that are closely related to the national avian industry, as well as the general public, therefore I issue the Mexican Regulatory Standard NOM-013-ZOO-1994, National Campaign against Velogenic Newcastle Disease.

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1. OBJECTIVE AND FIELD OF APPLICATION

1.1. The Standard hereunder is of obligatory observance in all the national territory and its objective is to establish the uniform procedures, activities, criteria, strategies and operative techniques for the prevention, control and eradication of Newcastle Disease in its velogenic presentation, in all the national territory, including in wild fowl, as well as the prevention and control of the mesogenic presentation.

1.2. The vigilance of this Standard belongs to the Ministry of Agriculture, Livestock and Rural Development, and also to the state governments in relation to their respective attributes and territories, under the corresponding coordination agreements.

1.3. The application of the provisions in this Regulatory Standard is the duty of the Animal Health Department, and also of the Ministry of Agriculture, Livestock and Rural Development's Federal State Agencies in relation to their respective attributes and territorial circumscriptions.

2. REFERENCES

In order to correctly apply this Standard, the following Mexican Regulatory Standard must be consulted:

NOM-008-SCFI-1993 General Measure Units System.

3. DEFINITIONS AND ABBREVIATIONS

For the purposes of this regulatory standard, the following terms shall be construed respectively to mean:

3.1. Viral isolation: Diagnostic test done at an approved laboratory for the National Campaign against the Newcastle Disease, by inoculation of chick embryos with samples from birds, for the isolation and identification of the Newcastle Disease virus.

3.2. Outbreak: Presence of one or more cases of the Newcastle Disease in its velogenic presentation in a determinate geographical area and in a given time span.

3.3. Campaign: The National Campaign against the Newcastle disease in its velogenic presentation.

3.4. Animal Sanitary Certificate: Official document issued by the Ministry or by those persons so approved or accredited to certify the upholding of this Standard. In the case of animals, it shall be signed by an approved or from the Ministry veterinary doctor.

- 3.5. Document of Proof of Free Flock: Official document issued by the Ministry of Agriculture, Livestock and Rural Development and granted to the owners of the flocks of primary and multiplier breeders enrolled in the Campaign and that have complied with the guidelines established in this Standard.
- 3.6. Document of proof of free farm: Official document issued by the Ministry of Agriculture, Livestock and Rural Development and granted to the owners of the broiler and layer farms enrolled in the Campaign and that have complied with the guidelines established in this Standard.
- 3.7. Document of proof of free enterprise: Official document issued by the Ministry of Agriculture, Livestock and Rural Development and granted to the enterprise owners of the birds enrolled in the Campaign and that have complied with the guidelines established in this Standard.
- 3.8. Progressive verification: The avian farms and facilities that are slowly being integrated into the campaign programs.
- 3.9. Control: Set of animal sanitary measures that have as an objective to reduce the incidence and prevalence of the Newcastle Disease in a determinate geographical area.
- 3.10. Department: The General Animal Health Department
- 3.11. ND: Newcastle Disease
- 3.12. VND: Velogenic Newcastle Disease
- 3.13. Eradication: Total elimination of the Newcastle Disease in its velogenic presentation, in a determinate geographical area.
- 3.14. Farm: Avian facilities or centers, that for the purposes of this Standard, are used for layers, broilers, growth, ornamental bird rearing and others that the Ministry may so deem necessary.
- 3.15. Approved Laboratory: Diagnostic laboratory recognized by the Ministry of Agriculture, Livestock and Rural Development.
- 3.16. Approved Veterinary Doctor: Professional recognized by the Ministry of Agriculture, Livestock and Rural Development to perform official animal sanitary activities.
- 3.17. Official Veterinary Doctor: Professional paid by the Ministry of Agriculture, Livestock and Rural Development.
- 3.18. Flock: Set of birds, that for the purposes of this Standard are primary or multiplier

breeders.

3.19. Procedures or phases: Set of animal sanitary activities done in a strategic and sequential manner, necessary for the eradication of the Newcastle Disease in its velogenic presentation.

3.20. Prevention: Set of animal sanitary activities, based on epizootiological studies, whose object is to avoid the presentation of the Velogenic Newcastle Disease.

3.21. Diagnostic Test: Test for the isolation and identification in chick embryo of the Newcastle Disease virus.

3.22. Ministry: Ministry of Agriculture, Livestock and Rural Development.

3.23. Low prevalence zone: Determinate geographical area, where the presence of recent VND cases has a minimum frequency, during a given interval of time.

3.24. Control zone: Determinate geographical area, where animal sanitary measures are operated, in order to reduce the incidence or prevalence VND, in a given interval of time.

3.25. Eradication zone or state: Determinate geographical area, where animal sanitary measures are operated, in order to eliminate VND, or epizootiological studies are being made, in order to verify the absence of said disease, in a two year period.

3.26. Free zone or state: Determinate geographical area, where VND has been eliminated or where there have not been positive cases of the disease, during a year.

4. GENERAL PROVISIONS

4.1. The Campaign is oriented towards the eradication of VND in primary and multiplier breeders, layers, broilers, fighting cocks, growth flocks and in ornamental birds.

As far as wild fowl are concerned, the Ministry shall determine the species in which, by reasons it considers necessary, this Standard shall be applied in the time and place it so deems.

4.2. The responsibility of the operation of the Campaign programs shall be shared amongst the federal and state governments, the owners, producers, traders, bird transporters and others that the Ministry so determines.

4.3. The protection of states, regions, zones, birds free from the disease or when a state or zone is within one year of entering the eradication phase, shall be done by a strict control of animal movements.

4.4. The flocks or farms where there are positive birds to the official diagnostic test for ND, will not be traded nor moved to any other destination that is not slaughter.

4.5. The campaign shall last until all the country is declared free of VND.

5. APPROVAL

5.1. The veterinary doctors that comply with the requirements established in the Mexican Regulatory Standard issued to that effect, shall be approved for activities related to ND.

5.2. The approved veterinary doctors shall participate in the verification of flocks and farms, as well as the eradication activities determined by the Ministry as well as, in the epidemiological surveillance in areas under control, intensive control, eradication and free from VND.

5.3. The approved laboratories shall be able to issue results of the virological isolation and identification for the verification of free to VND flocks and farms, as well as taking the samples in eradication zones, regions or states, with the purpose of its official liberation.

6. CAMPAIGN PHASES

6.1. The Campaign shall have the following operation phases:

- a) Control;
- b) Intensive control;
- c) Eradication; and
- d) Free

6.2. The phases will be done in three levels:

- a) State
- b) Region
- c) Zone

6.3. To obtain official recognition of the Campaign phases the following requirements must be complied with:

6.3.1. Control phase:

- a) Control of the movement of animals, products and by-products and avian equipment.
- b) Epidemiological surveillance system.

- c) Campaign promotion program.
- d) Verification of primary and multiplier breeders.

6.3.2. Intensive control phase:

- a) Control of movements
- b) Epidemiological surveillance system.
- c) Diagnostic infrastructure
- d) Campaign promotion program.
- e) Verification of primary and multiplier breeders.
- f) Progressive verification of farms of commercial layers, broilers, fighting cocks, wild fowl, song and ornamental birds, either in production or rearing.

6.3.3. In the eradication phase:

- a) Keep record of the movements of animals, products, by-products and avian equipments.
- b) Establish the epidemiological surveillance system.
- c) Prepare a Campaign promotion program.
- d) For the incorporation of states to the eradication phase, the absence of VND in farms of commercial layers, broilers, fighting cocks, wild fowl, song and ornamental birds, either in production or rearing shall be corroborated through epidemiologically taking samples of the size estimated by the Department.
- e) Whenever dealing with primary breeders, they shall invariable comply with the corresponding guidelines to obtain the document of proof that they are free from VND.

6.3.4. In the free phase:

- a) In order to enter the free phase, a zone, state or region must remain at least 12 months in eradication phase, and repeat the epidemiological testing that validates its animal sanitary situation, and having previously complied with the provisions of point 6.3.3. of this Standard.
- b) Have animal health emergency and epidemiological surveillance systems.

To declare a zone as free it shall be done by accord of the Minister of Agriculture, Livestock and Rural Development, and it shall be published in the Official Federal Gazette.

7. DIAGNOSIS

7.1. For the purposes of the Campaign the samples shall be sent to laboratories approved by the Ministry.

7.2. The official diagnostic test for the Campaign shall be the viral isolation and identification of velogenic strains for ND.

7.3. For the isolation and identification of ND virus, the samples must be:

- Trachea
- Lung
- Spleen
- Encephalon
- Cecal tonsils

7.4. For the isolation and identification of the ND virus, in fighting cocks, wild fowl, and song and ornamental birds, the samples shall be taken by cloacal and/or pharyngeal swabs, and/or fresh faeces and/or the organs mentioned hereinbefore.

7.5. Shipment of samples to the laboratory approved by the Ministry.

The organs and/or fresh faeces, shall be sent in jars or sterile bags, frozen and in no more than 48 hours after they were taken; the swabs shall be sent according to what the Laboratory approved by the Ministry requires.

7.6. Technique for the isolation of the ND virus and the interpretation of the results thereof.

When handling organs, the tissue must be cut in small chunks with sterile scissors and homogenized within a mortar or a Tenbroeck tissue grinder, using phosphate tryptose broth in a concentration of weight/volume.

When handling swabs or faeces, phosphate tryptose broth in a concentration of weight/volume shall be added.

After that, for any of the three types of samples mentioned before, the procedure shall be the following:

- a) Centrifuge at 2500 RPM during 20 min.; decant and filter through a millipore membrane of 0.45 μ ;
- b) Inoculate five, 9 to 11 day old embryos with 0.2 ml of the supernatant by the amnio-allantoid chamber;
- c) Candle the embryos with an ovoscope at least every 24 hrs.

The embryos that die in the first 24 hrs shall be considered as having died of traumatism.

Generally the VND virus kills embryos at two to seven days after inoculation, therefore those embryos that die after the first 24 hrs, must be kept in refrigeration at 4°C for further testing.

The amnio-allantoid fluid of the dead embryos, has sufficient hemagglutinines to produce the agglutination of chicken erythrocytes. This property gives a convenient and simple basis for the identification of the virus by means of the plate agglutination and the inhibition of hemagglutination by a monospecific serum.

- d) Take amnio-allantoid fluid of every dead embryo using a tuberculin syringe.
- e) Place 0.050 to 0.100 ml of fluid in three different places on the glass plate.
- f) The first drop shall be only of amnio-allantoid fluid, to the second add an equal volume of negative serum and to the third add antiserum against ND virus (positive serum), mix well using wooden toothpicks, a different one for each drop, incubate three to five minutes at room temperature.
- g) Add to each of the suspensions 0.050 to 0.100 ml of 5% washed chicken erythrocytes and mix with toothpicks. Move the plate softly during 10 to 15 sec and observe for hemagglutination. The positive cases hemoagglutinate quickly.
- h) If the sample is positive there will be hemagglutination in the fluid plus erythrocyte suspension and in the fluid plus negative serum plus erythrocytes, and there will be hemagglutination-inhibition in the fluid plus anti-VND plus erythrocytes, as shown in the following table:

MIX	ERYTHROCYTE AGGLUTINATION
Problem fluid + erythrocytes	Positive or negative
Problem fluid + serum against ND + erythrocytes	Positive or negative
Known ND virus + erythrocytes	Positive

Known ND virus + serum against ND
+ erythrocytes.

Negative

The embryos that die after the first 24 hrs, must be placed in refrigeration for at least 30 min., in order to more easily obtain the free from erythrocytes allantoic fluid since they can alter the reading of the reaction.

After that, only the clear or slightly red amnio-allantoic fluid is tested. If hemolyzed or contaminated fluids are used it is easy to observe false-positive reactions.

The ND virus is a contaminant in the laboratory, therefore all precautions must be taken to avoid the contamination of the samples being processed.

7.7. Characterization of the ND virus strains

The technique to determine the time for Half the Mortality at the Minimum Lethal Dose for Chick Embryo, is the following:

- a) Dilute the problem allantoic fluid in phosphate tryptose broth, at 10^{-1} to 10^{-10} .
- b) Use the last five dilutions of 10^{-6} to 10^{-10} .
- c) Inoculate ten, 9 to 11 day old embryos per each dilution, with 0.02 ml per embryo in the allantoic chamber. Five embryos shall be inoculated at time X and 8 hours later the other five, which represents time Y;
- d) Record the embryo mortality during the 128 hours incubation period. The embryos that die within the first 24 hours shall not be taken into consideration to estimate the embryo mortality time; and
- e) Register the identification of the embryos that die, separating the groups for the X hour and the y hours.

To estimate the embryo mortality time, the following formula shall be applied:

$$\text{TME} = \frac{(\text{NEX})(X) + (\text{NEY})(Y) + \text{ETC}}{\text{NEM}}$$

Where:

TME = Embryo mortality time

NEX = Number of dead embryos for hour X

X = Hour X y = Hour y

NEY = Number of dead embryos for hour Y

ETC = The same procedure is applied to the other dilutions

NEM = Total number of dead embryos

MORTALITY TIME**TYPE OF NEWCASTLE STRAIN
INTERPRETATION**

Less than 60 hours	Velogenic
From 60 to 90 hours	Mesogenic
More than 90 hours	Lentogenic

8. CAMPAIGN PROGRAMS

8.1. Every owner of birds, flocks or avian farms, must participate in one of the programs of the Campaign.

8.2. The Campaign programs are:

- a) Free flock program; and
- b) Free farm program.

8.3. In all the cases, the Ministry shall issue a document of proof whereby it is officially accepted that the Standard is being complied with.

8.4. To obtain the document of proof for free of VND flocks and farms the following procedure must be complied with:

8.4.1. Send to the Ministry the inscription to the Campaign format signed by the owner or legal representative and the official or approved veterinary doctor.

8.4.2. Send to the Ministry the laboratory test results that show the results of the viral isolation of VND, issued by the laboratory approved by the Ministry, and done according to the provisions of point 7 of this Standard.

The number of samples required for the issuance of document of proof of free flocks and farms are the following:

ZOOTECNICAL PURPOSE	NUMBER OF SAMPLES SENT	PERIODICITY OF SAMPLES (months)	SPECIFICATIONS AT THE TIME THEY ARE TAKEN
PRIMARY BREEDERS	35*	3 - 4	After 20 weeks of age
MULTIPLIER BREEDERS	35*	3 - 4	After 18 weeks of age
COMMERCIAL LAYERS	70*	3 - 4	Any age
BROILERS	70*	Every lot that comes into the facilities	After 12 days of age
FIGHTING, SONG AND ORNAMENTAL BIRDS	35*	3 - 4	Any age

WILD FOWL AS DETERMINED BY THE DEPARTMENT

* At least 10 samples shall be of live birds or organs, and the rest (25), may be tracheal or cloacal swabs; retesting will be done in the same manner with 35 tracheal or cloacal swabs.

** At least 10 samples shall be of live birds or organs, and the rest (60), may be tracheal or cloacal swabs; retesting will be done in the same manner with 70 tracheal or cloacal swabs.

*** Must correspond to tracheal or cloacal swabs retesting will be done in the same manner.

In case of a positive isolation, the following shall proceed:

1.- In free and in eradication zones

- Quarantine of the premises, time and place to be determined by the Ministry;

- Slaughter of positive flocks, sending them to a slaughter house or sacrificing them in the farm, and that shall be followed by burial, incineration or other procedure so deemed by the Ministry;

- Sanitizing and disinfection of the facilities, as determined in each case by the Ministry. The fulfillment of the process hereinbefore stated shall be supervised by an approved or official veterinary doctor; and

- Inactivation of organic wastes of the premises, as the Ministry shall determine in each case.

II. In control zones

- Quarantine of the premises, time and place to be determined by the Ministry;

- The movement of birds, waste and equipments of the quarantined facilities is prohibited;

- Once the premises are empty, they shall be sanitized and disinfected as determined in each case by the Ministry. The fulfillment of the process hereinbefore stated shall be supervised by an approved or official veterinary doctor; and

- Inactivation of organic waste in the premises, as the Ministry shall determine in each case.

8.4.3. All flocks and farms that have the document of proof as free from VND, during the time that the document is in force shall retest for virological diagnosis in accordance to the provisions of point 8.4.2., beginning from the date of issuance of same and the owners and approved veterinary doctors shall be responsible for the forwarding of the test results to the respective Federal State Agency, within 30 days after the corresponding dates; to the contrary the document of proof shall be cancelled.

8.5. Effective date of the documents of proof

8.5.1. The documents of proof of broiler and double-purpose primary and multiplier breeders free flocks will be in effect for 10 months, from the date of issuance of the laboratory test results.

8.5.2. The documents of proof of layers primary and multiplier breeders free flocks will be in effect for 12 months, from the date of issuance of the laboratory test results.

8.5.3. The documents of proof of layers primary and multiplier breeders free flocks will be in effect for 12 months, from the date of issuance of the laboratory test results.

8.5.4. The documents of proof of enterprises, flocks and farms free from VND, in wild, song and ornamental fowl and other domesticated fowl will be in effect for 12 months, from the date of issuance of the laboratory test results.

8.6. Use and restrictions of the documents of proof.

The documents of proof must always be shown when it is so required by the official personnel.

The documents of proof that come with shipments of birds, avian products or by-products, may be photocopies of the original document of proof provided that they are validated with the seal and signature of the official veterinary doctor or the one approved for the Campaign against Newcastle Disease.

9. IMMUNIZATION

9.1. Vaccines should be handled under the strictest of conservation methods for biologicals, maintaining the cold-chain; this shall be the shared responsibility of owners and official or approved veterinary doctors, enterprises that produce or sell the biologicals, as well as those others the Ministry so determines.

9.2. In zones enzootic to the disease, lyophilized, and emulsified vaccines against the said disease are obligatory.

9.3. In eradication or free zones, only live vaccines with lentogenic and inactivated strains can be used.

9.4. The Ministry may request from the owners or the bird handler, a vaccination program that is in accord with the epidemiological situation of ND, and in accordance to the geographical location of the avian facilities.

9.5. The Avian Promotion Centers in the country must use the ND emulsified vaccine.

9.6. For the production of live ND vaccines, classified lentogenic strains must be used.

10. QUARANTINE MEASURES

10.1. The production units, may be subjected to quarantine measures in the following circumstances:

- Precautionary quarantine when there is a suspected VND outbreak.
- Definite quarantine when an outbreak is confirmed by the isolation of a velogenic strain of ND virus.

10.2. The application or lifting of quarantine measures, must be officially notified by the Ministry, indicating the following information:

- The reason;
- The movement restrictions; and
- The applicable animal sanitary measures.

11. COMPENSATION

11.1. The Ministry shall coordinate with the state governments, producers and other persons related to the avian production, compensation mechanisms, in money or in kind, in order to allow the elimination of an outbreak, without injuring economically the producer.

12. MOVEMENT

12.1. The Animal Sanitary Certificate shall be required for the movement of birds in all the national territory, taking into account the zones of origin and destination, reason for the movement and the requisites that shall be as follows:

12.1.1. ORIGIN: Control and in eradication zone
DESTINATION: Control zone

REASON OF MOVEMENT	REQUISITES
a) Breeders, replacements, broilers and slaughter birds.	- None
b) Fighting cocks, birds for fairs, exhibitions, of song, ornament and wild fowl	- None
12.1.2. ORIGIN: Control zone DESTINATION: Free or in eradication zone	
REASON OF MOVEMENT	REQUISITES
a) Breeders, replacements, broilers under 3 days of age.	- Document of proof of origin VND free
b) Breeders, replacements, broilers more than 3 days of age.	- Document of proof of VND free flock or farm

c) Fighting cocks, birds
for fairs, exhibitions,
of song, ornament and
wild fowl

- Document of proof of
VND free flock, farm
or enterprise

d) Wild fowl and other
domesticated fowl
not considered in
the preceding points

- Shall be determined in
each case by the respective
Federal State Agency.

12.1.3. ORIGIN: Eradication zone

DESTINATION: Free or in eradication zone

REASON OF MOVEMENT

REQUISITES

a) Breeders, replacements,
broilers under 3 days
of age.

- Document of proof of
origin VND free

b) Breeders, replacements,
broilers more than 3
days of age.

- Document of proof of
VND free flock or farm

c) Fighting cocks, birds
for fairs, exhibitions,
of song, ornament and
wild fowl

- Document of proof of
VND free flock, farm
or enterprise

d) Wild fowl and other
domesticated fowl
not considered in
the preceding points

- Shall be determined in
each case by the respective
Federal State Agency.

12.1.4. ORIGIN: Free zone

DESTINATION: Control zone

REASON OF MOVEMENT

REQUISITES

a) Breeders, replacements,
broilers and slaughter
birds.

- None

- | | |
|---|--|
| b) Fighting cocks, birds
for fairs, exhibitions,
of song, ornament and
wild fowl | - None |
| c) Wild fowl and other
domesticated fowl
not considered in
the preceding points | - Shall be determined in
each case by the respective
Federal State Agency. |

12.1.5. The birds for fighting, fairs, exhibitions, song and ornament as referred to in the points 12.1.1., 12.1.2., 12.1.3., and 12.1.4., will not lose their place of origin if they do not remain more than 30 days at their place of destination; so that they can return to their place of origin, showing their document of proof of VND free flock, farm or bird, except for those birds whose origin is in free states, then they shall only show their Animal Sanitary Certificate.

12.2. The movement of avian products shall be regulated in all the national territory taking into account the zone of origin, and destination, the reason for the movement and the requisites that are hereunder stated:

12.2.1. ORIGIN: Control and in eradication zone
DESTINATION: Control zone

REASON OF MOVEMENT	REQUISITES
a) Fertile or table eggs:	- None
b) Meat and eggs for industrial purposes	- None
c) Meat in carcasses or pieces thereof:	- None
d) Salted meat:	- Meat must be covered by a thin layer of NaCL grains or powder up to 10% of the weight of the meat, or remains and presented in separate individual parts or fractions.

- | | |
|---------------------------------|--|
| f) Meat or remains
in brine: | - Impregnated in a 10%
saturated solution of
water and NaCl. |
| f) Sausages | - None |
| h) Canned products | - Sterile |

12.2.2. ORIGIN: Control and in eradication zone
DESTINATION: Free or in eradication zone

REASON OF MOVEMENT	REQUISITES
a) Fertile eggs:	- Document of proof VND free flock
b) Table eggs:	- Document of proof VND free farm
c) Meat and eggs for industrial purposes:	- Document of proof of VND free flock or farm; or previously cooked during 10 min. at 60°C or gamma irradiated, or pasteurized.
c) Meat in carcasses or pieces thereof:	- Document of proof of VND free flock or farm.
e) Salted meat:	- Document of proof of VND free flock or farm. - Meat must be covered by a thin layer of NaCL grains or powder up to 10% of the weight of the meat, or remains and presented in separate individual parts or fractions.
f) Meat or remains in brine:	- Document of proof of VND free flock or farm. - Impregnated in a 10%

saturated solution of
water and NaCl.

f) Sausages

previously cooked during
irradiated, or

- Document of proof of VND
free flock or farm, or
10 min. at 60°C or gamma
pasteurized.

h) Canned products

- Sterile

12.2.3. ORIGIN: Free zone

DESTINATION: Free, in eradication or control zone

REASON OF MOVEMENT

REQUISITES

a) Fertile or table eggs
or for industrial use

- None

b) Meat in carcasses or
pieces thereof:

- None

d) Salted meat:

- Meat must be covered
by a thin layer of NaCl
grains or powder up to
10% of the weight of the
meat, or remains and
presented in separate
individual parts or
fractions.

f) Meat or remains
in brine:

- Impregnated in a 10%
saturated solution of
water and NaCl.

f) Sausages

- None

h) Canned products

- Sterile

1.3.1. ORIGIN: Control and in eradication zone:
 DESTINATION: Control zone:

REASON FOR MOVEMENT	REQUISITES
a) Manure with or without litter, viscera, bedding	- None

12.3.2. ORIGIN: Control or in eradication zone:
 DESTINATION: Free or in eradication zone:

REASON FOR MOVEMENT	REQUISITES
a) Manure with or without litter, viscera, bedding	- Movement prohibited

12.3.3. ORIGIN: In eradication zone:
 DESTINATION: Free zone:

REASON FOR MOVEMENT	REQUISITES
a) Manure with or without litter, viscera, bedding	- Movement prohibited

12.3.4. ORIGIN: Free zone:
 DESTINATION: Free, in eradication or control zone:

REASON FOR MOVEMENT	REQUISITES
a) Manure with or without litter, viscera, bedding	- None

12.4. The movement of avian equipments shall be regulated in all the national territory taking into consideration the zone of origin and destination, reasons for the movement and requisites as hereunder stated:

12.4.1. ORIGIN: Control or in eradication zone:

DESTINATION: Control zone:

REASON FOR MOVEMENT	REQUISITES
a) Chick boxes, or egg cartons that are of discardable material	- None
b) Used avian equipments	- None

12.4.2. ORIGIN: Control and in eradication zone:

DESTINATION: Free and in eradication zone:

REASON FOR MOVEMENT	REQUISITES
a) Chick boxes, or egg cartons that are of discardable material	- Movement prohibited
b) Used avian equipments	- Disinfected under the supervision of an approved or official veterinary doctor

12.4.3. ORIGIN: Free zone

DESTINATION: Free, in eradication or control zone:

REASON FOR MOVEMENT	REQUISITES
a) Chick boxes, or egg cartons that are of discardable material	- None
b) Used avian equipments	- None

13. EPIDEMIOLOGICAL SURVEILLANCE

13.1. In the case of an outbreak in a farm or a positive VND virological isolation, the owner of the birds as well as the approved veterinary doctor and/or the one responsible for the farm or the laboratory, as it so corresponds, shall be obligated to immediately

notify such a case to the Ministry.

13.2. In regions, states and zones in eradication or free from VND, it is the responsibility of the federal and state governments, as well as the holders or producers of birds and the approved veterinary doctors to execute the epidemiological surveillance of all suspected or confirmed VND outbreaks.

Said surveillance shall be done through the verification of birds, their products and by-products, as well as the official documentation that is required for their movement from control areas to areas in eradication or free, as well as, by virological monitoring, whenever the federal and state governments so determine it, as well as through the organized producers and those sectors related to the avian industry, in accordance to the provisions under the accords and covenants that to that effect shall be signed.

14. LOCALIZATION OF AVIAN ENTERPRISES, HATCHERIES, SLAUGHTER HOUSES, MEAT PACKERS, SIFTERS AND FEED PRODUCERS

The provisions relative to this point shall be applicable to the new units that are being planned or are in the process of being established.

14.1. In order to establish a farm of primary or multiplier breeders and specific pathogen free birds, there must be a distance of 5 km from these farms to the nearest avian, porcine or cattle enterprise, including slaughter houses, feed and other by-products processing plants. This distance shall also be applied to human habitations where domesticated birds are reared. The distance can be modified taking into consideration the existent dominance of winds and the topography of the terrain.

14.2 For farms of broilers, commercial layers, turkeys for fattening, and replacement birds the distance shall be of 1 to 3 km between these and other avian, porcine and cattle enterprises, susceptible of modification according to the dominant winds and the topography.

14.3. The hatcheries should be at least 2 km from any other avian, porcine and cattle enterprises. This distance shall also be applied to human habitations.

14.4. The feed producing plants shall be established at least 500 meters away from other avian, porcine and cattle enterprises.

14.5. For the sanitary control of waste such as dead animals and garbage, there must be available one of the following elimination methods.

- a) Incinerating furnaces
- b) Rendering plants

- c) Sanitary burial
- d) Others that the Department may so deem it

14.6. The rendering and sieving plants for chicken and hen manure, with bedding, must be at least 5 km away in relation to other avian enterprises, and at least 1 km away from the side of federal or principal highways, taking into consideration the dominant winds and the topography.

14.7. The transportation of chicken or hen manure with litter must be done in closed vehicles or in sacks.

14.8. For animal consumption or the agricultural use of the chicken and hen manure, there must be a minimum distance of 5 km from other avian farms; or else having previously obtained authorization by the owner of the farm.

15. IMPORTS

15.1. The birds, avian products and by-products, that are to be imported must have an Animal Sanitary Certificate of origin that shall indicate in it, that they come from a country, state, region, farm and/or hatchery free from VND.

16. CONCORDANCE WITH INTERNATIONAL STANDARDS

This Mexican Regulatory Standard is not equivalent to any international standard.

17. SANCTIONS

The non-compliance of the requirements contained within this Standard shall be sanctioned in accordance to the provisions of the Federal Animal Health Act.

18. BIBLIOGRAPHY

ANECA. Curso sobre diagnóstico de laboratorio para la Campaña contra la enfermedad de Newcastle y Salmonelosis Aviar. Enero 1993.

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Manual de procedimientos sobre la Protección de la salud animal y humana en las instalaciones pecuarias y avícolas. Agosto. 1983.

Pomeroy, B.S. and K.V. Nagaraja Fowl Typhoid. En: Diseases of Poultry Ed Calnek B.W. et al., 9th Ed. Iowa State University Press, Ames, Iowa USA 1991 pp 452-470.

19. TRANSITORY PROVISIONS

This Standard shall come into effect the following day after its publication in the Official Federal Gazette.

Effective Suffrage. No Reelection.

México, D.F. on the 7th of February of 1995.- The General Law Department, Roberto Zavala Echavarría.- Signature.

ACLARATION to the Mexican Regulatory Standard NOM-013-ZOO-1994, National
 Campaing against Newcastle Disease, published on march 30, 1995

In the page 12, say:

ZOOTECHNICAL PURPOSE	NUMBER OF SAMPLES SENTS	PERIODICITY OF SAMPLES (months)	SPECIFICATIONS AT THE TIME THEY ARE TAKEN
PRIMARY BREEDERS	35*	3-4	After 20 weeks of age
MULTIPLIER BREEDERS	35*	3-4	After 18 weeks of age
COMMERCIAL LAYERS	70*	3-4	Any age
BROILERS	70*	Every lot that comes into the facilities	After 12 days of age
FIGHTING, SONG AND ORNAMENTAL BIRDS	35*	3-4	Any age
WILD FOWL	As determined by the Department	As determined by the Department	As determined by the Department

It should say:

ZOOTECHNICAL PURPOSE	NUMBER OF SAMPLES SENTS	PERIODICITY OF SAMPLES (months)	SPECIFICATIONS AT THE TIME THEY ARE TAKEN
PRIMARY BREEDERS	35*	3-4	After 20 weeks of age
MULTIPLIER BREEDERS	35*	3-4	After 18 weeks of age
COMMERCIAL LAYERS	70**	3-4	Any age
BROILERS	70**	Every lot that comes into the facilities	After 12 days of age
FIGHTING, SONG AND ORNAMENTAL BIRDS	35***	3-4	Any age
WILD FOWL	As determined by the Department	As determined by the Department	As determined by the Department

At least 10 samples shall be of live birds or organs, and the rest (25), may be tracheal or cloacal swabs, retesting will be done in the same manner with 35 tracheal or cloacal swabs.

** At least 10 samples shall be of live birds or organs, and the rest (60), may be tracheal or cloacal swabs, retesting will be done in the same manner with 70 tracheal or cloacal swabs.

*** Must correspond to tracheal or cloacal swabs retesting will be done in the same manner.

In case of positive solution, the following shall proceed:

1.- In free and in eradication zones

- Quarantine of the premises, time and place to be determined by the Ministry;
- Slaughter of positive flocks, sending them to a slaughter house or sacrificing them in the farm, and that shall be followed by burial, incineration or other procedure so deemed by the Ministry;

ATTACHMENT 6

MINISTRY OF AGRICULTURE AND WATER RESOURCES

Mexican Regulatory Standard NOM-005-ZOO-1994 National Campaign against Avian Salmonellosis.

At the margin a seal with the National Emblem, that says: Mexican United States.- Ministry of Agriculture and Water Resources.-General Law Department.

The Ministry of Agriculture and Water Resources, through the General Law Department, under the articles: 1st, 3rd, 4th fraction III, 12th, 13th, 21st, 22nd, 31st, 32nd and 33rd of the Federal Animal Health Act; 1st, 38th fraction II, 40th, 41st, 43rd, 47th fraction IV of the Federal Weights, Measures and Standards Act; 26th and 35th of the Federal Public Administration Organic Law; 10th fraction V of the Ministry of Agriculture and Water Resources' Internal Act; and

CONSIDERING

That it is a function of the Ministry of Agriculture and Water Resources to promote livestock production and therefore to prevent, control and eradicate diseases and harmful pests that, as Avian Salmonellosis, affect the national poultry industry in its production level.

That by accord published in the Official Federal Gazette on the 25th of March of 1980, the National Campaign against Avian Salmonellosis was established in all the national territory on an obligatory, general and permanent basis.

That on the 12th of March of 1992, the modifications to the program of the Campaign were published in the official Federal Gazette.

That the poultry industry has a high degree of productive efficiency for the sustainment of the feeding level of the country's population.

That Avian Typhoid and Pullorosis are bacterial diseases produced by *Salmonella gallinarum* and *Salmonella pullorum* respectively, and are generically known as Avian Salmonellosis, a highly contagious disease, that affects young as well as older birds, producing high mortality, reduction in the egg production, lower incubability, expenses in treatments and vaccinations and important economic loses for the national poultry industry.

That to increase production and improve the sanitary quality of birds, their products or by-products, it is necessary to establish a strict control on Avian Salmonellosis, vying for its eradication, in order to allow the national poultry industry to develop in better sanitary conditions.

That to comply with the objectives hereinbefore stated, I issue the Mexican Regulatory Standard NOM-005-ZOO-1993, National Campaign against Avian Salmonellosis.

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1. OBJECTIVE AND FIELD OF APPLICATION

1.1. The Standard hereunder is of obligatory observance in all the national territory and its objective is to establish the procedures, activities, criteria, strategies and operative techniques for the prevention, control and eradication of Avian Salmonellosis (Avian Typhoid and Pullorosis), in all the national territory.

1.2. The vigilance of this Standard belongs to the Ministry of Agriculture and Water Resources, and also to the state governments in relation to their respective attributes and territories, under the corresponding coordination agreements.

1.3. The application of the provisions in this Regulatory Standard is the duty of the Animal Health Department, and also of the Ministry of Agriculture and Water Resources' Federal State Agencies in relation to their respective attributes and territorial boundaries.

2. REFERENCES

In order to correctly apply this Standard, the following Mexican Regulatory Standard must be consulted:

NOM-003-EM-ZOO-1994 Criteria for the Operation of Test Laboratories approved for animal sanitary purposes.

3. DEFINITIONS

3.1. Definitions and abbreviations

For the purposes of this regulatory standard, the following terms shall be construed respectively to mean:

3.1. Polyvalent antigen K:

Verified and authorized by the Ministry of Agriculture and Water Resources biological product used for the serological detection of bird carriers in the field of Pullorosis (*S. pullorum*) and Avian Typhoid (*S. gallinarum*), formed by the following strains:

intermediate	-	4
standard		11
variant	-	77
variant	-	79
variant	-	269

3.2. APSP:

Quick agglutination plate test (with whole blood) for *S. pullorum* and *S. gallinarum*.

3.3. Campaign:

The National Campaign against Avian Salmonellosis (Pullorosis and Avian Typhoid).

3.4. Animal Sanitary Certificate:

Official document issued by the Ministry of Agriculture and Water Resources or by those persons so approved or accredited to certify the upholding of this Standard. In the case of animals, it shall be signed by an accredited, approved or from the Ministry veterinary doctor.

3.5. Document of proof of free flock:

Official document issued by the Ministry of Agriculture and Water Resources and granted to the owners of the flocks enrolled in the Campaign and that have complied with the established guidelines for the verification program.

3.6. Document of proof of free farm:

Official document issued by the Ministry of Agriculture and Water Resources and granted to the owners of the farms enrolled in the Campaign and that have complied with the established guidelines for the verification program.

3.7. Document of proof of controlled flock:

Official document issued by the Ministry of Agriculture and Water Resources and granted to the owners of the flocks enrolled in the Campaign, that use R9 Vaccine and/or drugs against Avian Salmonellosis and that have complied with the established guidelines for the verification program.

3.8. Document of proof of controlled farm:

Official document issued by the Ministry of Agriculture and Water Resources and granted to the owners of the farms enrolled in the Campaign, that use R9 Vaccine and/or drugs against Avian Salmonellosis, or whose birds come from controlled flocks and that have complied with the established guidelines for the verification program.

3.9. Document of proof of enterprise enrolled in the Campaign:

Official document issued by the Ministry of Agriculture and Water Resources and granted to the enterprises, owners of the birds enrolled in the Campaign and that have complied with the established guidelines for the verification program.

3.10. Control:

Set of animal sanitary measures whose object is to decrease the incidence or prevalence of Avian Salmonellosis (Pullorosis and Avian Typhoid), in a determinate geographical area.

3.11. Department:

The General Animal Health Department.

3.12. Eradication:

The total elimination of Avian Salmonellosis (Pullorosis and Avian Typhoid) in a determinate geographical area.

3.13. Approved Laboratory:

Laboratory recognized by the Ministry of Agriculture and Water Resources to render diagnostic services in animal sanitary matters.

3.14. Approved Veterinary Doctor:

Professional recognized by the Ministry of Agriculture and Water Resources in order to render diagnostic services in animal sanitary matters.

3.15. Official Veterinary Doctor:

Professional that is a part of the Ministry of Agriculture and Water Resources.

3.16. Procedures or phases:

Set of animal sanitary activities done in a continuous and strategic fashion, necessary for the eradication of Avian Salmonellosis (Pullorosis and Avian Typhoid)

3.17. Prevention:

Set of animal sanitary activities, based on epizootiological studies, that have as an object to avoid the presence of Avian Salmonellosis (Pullorosis and Avian Typhoid).

3.18. Diagnostic Tests:

These are the official diagnostic methods for Pullorosis and Avian Typhoid:

Complete blood quick agglutination plate test.

- Bacteriological test with identification and isolation of *S. pullorum* and *S. gallinarum*.

3.19. Avian Salmonellosis:

Contagious bacterial disease, whose causative agents are *S. pullorum* that produces Pullorosis and *S. gallinarum* that produces Avian Typhoid.

3.20. Ministry:

The Ministry of Agriculture and Water Resources:

3.21. R9 Vaccine:

The verified and authorized by the Ministry biological, used for Avian Typhoid control.

3.22. Low prevalence zone:

Determinate geographical area, where the presence of recent Avian Salmonellosis cases has a minimum frequency, during a given interval of time.

3.23. Control zone:

Determinate geographical area, where animal sanitary measures are operated, in order to reduce the incidence or prevalence of Avian Salmonellosis, in a given interval of time.

3.24. Eradication zone or state:

Determinate geographical area, where animal sanitary measures are operated, in order to eliminate Avian Salmonellosis, or epizootiological studies are being made, in order to prove the absence of said disease, in a given interval of time.

3.25. Free zone or state:

Determinate geographical area, where Avian Salmonellosis has been eliminated or where there have not been positive cases of the disease, in a given interval of time.

4. APPROVAL

4.1. Approval shall be granted concerning Avian Salmonellosis to the Veterinary Doctors that comply with the requisites established in the Mexican Regulatory Standard that shall be issued to that effect, who participate in the verification of flocks, farms, enterprises, free and control birds; as well as the activities of eradication that the Ministry so deems, and the epidemiological surveillance in control, eradication and free areas of said diseases.

4.2. The diagnostic laboratories that comply with the requisites established within the Mexican Regulatory Standard that shall be issued to that effect, shall be approved and will be allowed to emit isolation and bacterial identification results, for the verification of flocks, farms, enterprises and free and control birds; as well as for the taking of bacteriological samples in eradication or in process of identification as free, regions, states or zones.

5. GENERAL CAMPAIGN PROCEDURES

5.1. In primary breeder flocks, the following programs will be executed:

- a) Issuance of documents of proof of flocks free from Avian Salmonellosis; and
- b) Sacrifice of flocks positive to *S. pullorum* and *S. gallinarum*.

5.2. In multiplier breeder flocks the following programs shall be executed:

- a) Issuance of documents of proof of flocks free from Avian Salmonellosis; and
- b) Sacrifice of flocks positive to *S. pullorum* and *S. gallinarum*, when they are found in zones or states that are in eradication phase or are free from Avian Salmonellosis; and
- c) To apply the R9 Vaccine and/or treatment, in flocks positive to *S. pullorum* and *S. gallinarum*, each case shall be so determined by the Department, in order to grant the respective authorization.

5.3. In broiler, fighting cocks, layer and turkey farms, flocks and birds the following programs shall be executed.

- a) Issuance of documents of proof of farms or flocks free from Avian Salmonellosis; and
- b) Sacrifice of flocks or birds positive to *S. pullorum* and *S. gallinarum*, that are within Avian Salmonellosis free or eradication zones or states.

5.4. In birds of song, ornament or wild life the following programs shall be executed:

- a) Issuance of documents of proof of farms or flocks free from Avian Salmonellosis; and
- b) Sacrifice of flocks or birds positive to *S. pullorum* and *S. gallinarum*, that are within Avian Salmonellosis free or in eradication zones or states.

5.5. In farms, flocks and domesticated fowl not cited in the hereinbefore points, the following programs shall be executed:

- a) Issuance of documents of proof of farms or flocks free from Avian Salmonellosis; and

- b) Sacrifice of flocks or birds positive to *S. pullorum* and *S. gallinarum*, that are within Avian Salmonellosis free or in eradication zones or states.

6. CAMPAIGN PHASES

6.1. The Campaign includes the following operation phases:

- a) Control
- b) Intensive control
- c) Eradication
- d) Free

6.2. The Campaign shall be executed in 5 levels:

- a) Flock
- b) Farm
- c) Zone
- d) State
- e) Region

6.3. The recognition of the Campaign Phases shall be limited to the following requisites:

6.3.1. Control:

Movement control, adequate epidemiological surveillance system; diagnostic infrastructure; promotion program for the Campaign; and the verification of primary breeder and multiplier breeders.

6.3.2. Intensive control

Movement control, adequate epidemiological surveillance system; diagnostic infrastructure; promotion program for the Campaign; and the verification of primary breeders and multiplier breeders; progressive verification of layers, broilers, turkeys, fighting cocks, birds of song and ornament, or wildlife farms for production or breeding purposes.

6.3.3. Eradication

Have an operational movement control system for animals, their products, by-products and avian equipments; the suspension of bird vaccinations; adequate epidemiological surveillance system, Campaign promotion program; determination of the sample size as deemed by the Department, that shall corroborate the absence of *S. pullorum* and *S. gallinarum* in layers, broilers, turkeys, fighting cocks, birds of song and ornament, or wildlife farms for production or breeding purposes.

Primary breeders shall invariably be certified.

6.3.4. Free:

Having complied with the specified provisions of the point hereinbefore stated, verifying the absence of *S. pullorum* and *S. gallinarum*, by negative bacterial isolations in 100% of the farms within the zone or state to be considered as free; or by verification of 100% of the primary and multiplier breeder flocks, as well as taking samples of the rest of the involved avian production; having emergency and epidemiological surveillance systems.

An accord by the Minister of Agriculture and Water Resources shall be published in the Official Federal Gazette to declare a zone as free.

7. DIAGNOSIS

7.1. To participate in the Campaign, samples shall be sent to the official or approved by the Ministry laboratories.

7.2. The official tests for the Campaign purposes are:

- a) Quick agglutination plate test, with complete blood; and
- b) Bacteriological test by isolation and identification of *S. S. pullorum* and *S. gallinarum*.

7.3. For the isolation and identification of *S. pullorum* and *S. gallinarum*, the samples must be:

a) From birds that have been found positive or suspicious to the APSP test, or are sad or diseased, culture from:

- Liver
- Spleen
- Gall bladder
- Ovaries
- Testes
- Cecal tonsils
- Pancreas

b) From dead birds culture from:

- Liver
- Spleen
- Gall bladder
- Ovaries

- Testes
- Bone marrow

c) From chicks culture from:

- Liver
- Spleen
- Gall bladder
- Yolk

d) From fighting cocks:

- Cloacal swabs

e) Wild, song and ornament birds culture from:

- Cloacal swabs and/or fresh faeces.

f) From dead combat birds:

- Liver
- Spleen
- Gall bladder
- Ovaries
- Bone marrow

g) From wild, song and ornament birds culture from:

- Liver
- Spleen
- Gall bladder
- Ovaries
- Bone marrow

h) From 18 day old or picked embryos culture from

- Liver
- Yolk

Birds and other samples sent to the laboratory must be processed in groups of 10.

Three consecutive serial cultures shall be made to determine when a case is positive or negative to *S. pullorum* and *S. gallinarum*.

4. The way to send samples to the official or approved by the Ministry laboratory, shall be the

following:

7.4.1. The complete organs shall be sent in jars or sterile bags and in refrigeration (4°C) within 48 hrs maximum after they have been obtained.

7.4.2. Live birds must be sent in cages or adequate boxes for their transportation.

7.4.3. The swabs shall be sent in sterile airtight containers, in a maximum period of 48 hours after they have been obtained. They shall be sent in peptonic water or any other transport medium as required by the laboratory to which the sample shall be sent, and they must be preserved in refrigeration at 4°C.

7.5. Culture mediums required for the isolation of *S. pullorum* and *S. gallinarum*.

a) Selective enrichment mediums:

- tetrathionate brilliant green broth
- iodized tetrathionate broth
- selenite broth

b) Culture mediums:

- MacConkey agar
- Brilliant green agar

c) Biochemical tests mediums

- TSI
- LIA
- SIM
- Urea
- Simmons citrate

d) Complementary biochemical tests mediums:

- Malonate broth
- Glucose
- Saccharose
- Lactose
- Dulcitol
- Maltose

e) Antisera that are required for serotyping:

- Polyvalent Al-vi antiserum

- Somatic "O" Group D antiserum

7.6. Isolation Method for *S. pullorum* and *S. gallinarum*:

SAMPLE

Selective enrichment broth

1:10 sample broth

and/or

Inoculate in selective solid mediums

Incubate 24 hrs at 37°C. If growth is negative to *Salmonella spp*
Re-inoculate at 48 and 72 hours after eliminating the liquid medium

Inoculate suspect colonies in biochemical test mediums

incubate 24 hrs

at 37°C

Serotyping

7.7. Serology

7.7.1. To do the test a Polyvalent antigen K shall be used, and this test will be taken as complementary to the bacteriological test.

7.7.2. The APSP will be taken as positive, if the agglutination is light or strong, and evident between zero to 120 sec after having mixed the antigen with the blood.

7.7.3. The APSP will be taken as suspect, if the agglutination is evident between 90 to 120 sec after having mixed the antigen with the blood.

7.7.4. The APSP will be taken as suspect, if the agglutination is evident after 120 sec following the mixture of the antigen with the blood.

7.7.5. The bacteriological tests will be done under the responsibility of the approved laboratory and the serological tests correspond to the approved Veterinary Doctor in this matter, as well as the approved laboratory.

8. HATCHERIES

8.1. The hatcheries that are incubating fertile eggs from flocks in control must do bacteriological exams of 10, 18 day old or picked embryos, from the eggs that come from the control flocks, repeated with a minimum of every three weeks and maximum of a month.

The results of these exams will be handed in to the respective federal state livestock underagency, whenever they are so required.

8.2. Waste, from incubators where fertile eggs from infected flocks are, shall be incinerated or inactivated before discarding.

8.3. Handling of chicks in the hatchery.

8.3.1. The chick that comes from control flocks shall not be handled with the chicks that come from free flocks.

8.3.2. The hatchery shall notify the owner of the birds, in writing, whenever it delivers male or female replacement chicks, if they come from an Avian Salmonellosis free or in control flock.

The hatcheries that handle fertile eggs from control flocks must not send the chicks to eradication or free zones.

8.4. Transportation

8.4.1. Trucks that transport eggs and male or female replacement chicks must be washed and disinfected before loading and after delivery.

8.4.2. Only eggs and male or female replacement chicks from Avian Salmonellosis free flocks shall be transported in one shipment, without mixing with birds, their products or by-product that come from control flocks.

9. CAMPAIGN PROGRAMS

9.1. The primary breeders free from Avian Salmonellosis, must comply with the following requisites in order to obtain document of proof that they are free from Avian Salmonellosis:

a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.

b) Register of the serological results of the APSP test of 10% of the birds in the flock, in the case of primary broiler and double-purpose breeders, this test shall be made at 20 weeks of age, in male and female lines; in layer breeders, after the 18th week of age.

c) Negative bacteriological results to *S. pullorum* and *S. gallinarum* on 10 birds per line.

d) Bacteriological exams shall be initiated in the case of broiler and double-purpose breeders, this test shall be made after the 20th week of age, in layer breeders, after the 18th week of age.

9.2. The flocks of multiplier breeders free of Avian Salmonellosis, including turkeys, must comply with the following requisites in order to obtain document of proof that they are free from Avian Salmonellosis:

a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.

b) Register of the serological results of the APSP test of 10% of the birds in the flock, in the case of broiler and double-purpose multiplier breeder and turkey breeders, this test shall be made at 20 weeks of age, in male and female lines; in layer breeders, after the 18th week of age.

c) Negative bacteriological results to *S. pullorum* and *S. gallinarum* on 10 birds per line.

d) Bacteriological exams shall be initiated in the case of broiler and double-purpose breeders, this test shall be made after the 20th week of age, in layer breeders, after the 18th week of age.

9.3. The flocks of multiplier breeders in control of Avian Salmonellosis, including turkeys, must comply with the following requisites in order to obtain document of proof that they are free from Avian Salmonellosis:

a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.

b) Negative bacteriological results to *S. pullorum* and *S. gallinarum* on 10 birds per line.

d) Bacteriological exams shall be made in the case of broiler and double-purpose breeders and turkeys after the 20th week of age, in layer breeders, after the 18th week of age.

9.4. The flocks in growth and development of primary breeders, multiplier breeders and layers, must comply with the following requisites in order to obtain a document of proof that they are free from Avian Salmonellosis:

a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.

b) Negative bacteriological results to *S. pullorum* and *S. gallinarum* on 3 birds between 7 and 14 days of age.

c) The document of proof shall be in effect for 4 months counting from the date of issuance of

the laboratory results.

9.5. The layer farms in control or free from Avian Salmonellosis must comply with the following requisites in order to obtain document of proof that they are free from Avian Salmonellosis:

- a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.
- b) Negative bacteriological results to *S. pullorum* and *S. gallinarum* field strains on 5 birds selected randomly per every ten thousand birds in the farm, from all the houses within the farm.
- d) Negative bacteriological exams shall be repeated every four months from the date of the document of proof and the results shall be sent within the following 30 days after the taking of samples, to the respective Federal State Livestock Underagency during the time span that the document of proof is in effect, or else it shall be cancelled.

9.6. The molting flocks must comply with the following requisites in order to obtain document of proof that they are free from Avian Salmonellosis:

- a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.
- b) Negative bacteriological results to *S. pullorum* and *S. gallinarum* field strains on 10 primary breeders per line and 10 primary breeders per flock.
- c) Photostatic copy of the document of proof that they are free from Avian Salmonellosis signed by an official or approved Veterinary Doctor in the respective area.

9.7 The farms of broilers and turkeys free or in control of Avian Salmonellosis must comply with the following requisites in order to obtain document of proof that they are free from Avian Salmonellosis:

- a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.
- b) Negative bacteriological results to field strains on three to five chicks or poults of seven to fourteen days of age, for every ten thousand in the farm. This test must be repeated on each lot that enters into the farm, from the date of issuance of the proof of evidence.

The results of the corresponding retesting bacteriological exams, shall be sent to the respective Federal State Livestock Underagency within 45 days of the internment of the lot into the farm, or else the proof of evidence shall be cancelled.

9.8. The flocks and farms of fighting cocks, should cover the following requisites in order to

obtain proof of evidence as free or in control of Avian Salmonellosis:

- a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.
- b) Negative bacteriological results to *S. pullorum* and *S. gallinarum* field strains on 10 cloacal swabs and/or 10 birds of the mortality or 10% of the total number of birds, whichever is the highest quantity.
- c) The bacteriological exams shall be repeated every four months from the date of the document of proof and the results shall be sent within the following 36 days after the taking of samples, to the respective Federal State Livestock Underagency during the time span that the document of proof is in effect, or else it shall be cancelled.

9.9. Wildlife, song and ornament birds and other domesticated fowl.

Taking into consideration and evaluating the type of birds, the geographical and sanitary situation of the animals, the Department shall decide on the application of the following requisites:

- a) Inscription to the Campaign format properly filled out and signed by an official or approved Veterinary Doctor.
- b) Negative bacteriological results to *S. pullorum* and *S. gallinarum* field strains on 10 cloacal swabs and/or 10 birds of the mortality or 10% of the total number of birds, whichever is the highest quantity, this test shall be repeated every 40 days from the date of issuance of the document of proof.

The results of the repeat bacteriological exams shall be sent within the following 36 days after the taking of samples, to the respective Federal State Livestock Underagency during the time span that the document of proof is in effect, or else it shall be cancelled.

9.10. Time of effect of documents of proof.

- a) The documents of proof for broiler and double-purpose primary and multiplier breeders free flocks, shall be in effect during 10 months from the date of the APSP test.

The documents of proof for layer primary and multiplier breeders free flocks, shall be in effect during 13 months from the date of the APSP test.

- b) The documents of proof for broiler and double purpose multiplier breeders in control shall be in effect during 10 months after the issuance of the bacteriological laboratory results. The documents of proof for layer multiplier breeders control flocks, shall be in effect during 13 months from the date of the issuance of the bacteriological laboratory results.

c) The documents of proof of broiler, layer, turkey, wildlife, song and ornament and other domesticated fowl enterprises, flocks or farms free from Avian Salmonellosis will be in effect during 12 months from the issuance of the bacteriological laboratory results.

9.11. Use and restrictions of the documents of proof.

- a) The documents of proof must be shown to the official personnel whenever they so require it.
- b) The documents of proof must come along with any shipment of birds, their products or subproducts, these may be photocopies of the original document of proof, provided they are validated with the seal and signature of an official or an approved by the Ministry for the Campaign against Avian Salmonellosis Veterinary Doctor.

10. IMMUNIZATION

10.1. The vaccines that are used for the Campaign activities must be verified and authorized by the Ministry for each lot produced.

10.2. It shall be possible to use live vaccines prepared with R9 strain of *S. gallinarum*, for Avian Typhoid control, except in primary breeders, in all the national territory or in any type of birds that are in a free or in an eradication state for said disease.

10.3. The application of vaccines shall be under official control and they shall be used under previous authorization, for multiplier breeders, layers, turkeys, fighting cocks and other domesticated fowl. The application of vaccines is barred from primary breeders. Its application is forbidden in wildlife, song and ornament and other domesticated fowl.

10.4. In the states that wish to classify as in eradication, the application of the R9 vaccine and bacterines shall be suspended from primary and multiplier breeders, for at least a year previous to its intent of classification. Its application is barred from any type of domestic or wild fowl in a free or in an eradication state.

10.5. The vaccination must be applied or supervised by approved or official Veterinary Doctors who shall issue a document of proof of vaccination.

10.6. The handling of vaccines and antigens shall be made with strict conservation measures, keeping an efficient cold chain, this shall be the shared responsibility of the owners, the approved or official Veterinary Doctors, enterprises and commercial handlers of biological products and those others that the Ministry so deems it.

11. QUARANTINE MEASURES

11.1. The production units shall be subjected to quarantine measures, precautionary or definitive, under the following circumstances:

a) The suspicion of an outbreak of Avian Salmonellosis; and/or

b) A confirmed outbreak of *S. pullorum* and/or *S. gallinarum*.

11.2. The quarantine shall be officially notified by the Ministry indicating the reason, restrictions and the applicable animal sanitary measures.

11.3. The establishment and ending of quarantine measures will be done as provided for in the Federal Animal Health Act.

12. COMPENSATION

The Ministry shall coordinate with the state governments, producers and other persons related to the avian production, compensation mechanisms, in money or in kind, in order to allow the elimination of an outbreak, without injuring economically the producer.

13. MOVEMENT OF BIRDS, THEIR PRODUCTS, BY-PRODUCTS, AVIAN EQUIPMENT AND ANIMAL MEALS.

13.1. The movement of birds shall be regulated in all the national territory, taking into account the zones of origin and destination, reason for the movement and the requisites that shall be as follows:

13.1.1. ORIGIN: Control zone

DESTINATION: Control zone

REASON OF MOVEMENT

REQUISITES

- | | |
|---|--|
| a) Less than 3 day old birds for breeding | <ul style="list-style-type: none"> - Document of proof of free from Avian Salmonellosis flock. - Animal Sanitary Certificate. |
| b) Less than 3 day old re-population and broiler birds | <ul style="list-style-type: none"> - Document of proof of free or in control of Avian Salmonellosis - Animal Sanitary Certificate. |
| c) More than 3 day old re-population and broiler birds. | <ul style="list-style-type: none"> - Animal Sanitary Certificate. |

- | | |
|---|---|
| d) Slaughter birds | - Animal Sanitary Certificate. |
| e) Fighting cocks | - Document of proof of free or in control of Avian Salmonellosis flock, farm or enterprise.
- Animal Sanitary Certificate. |
| f) Exhibition birds | - Document of proof of free or in control of Avian Salmonellosis flock, farm or enterprise.
- Animal Sanitary Certificate. |
| g) Birds of song and Ornament | - Animal Sanitary Certificate. |
| h) Wild birds and other domesticated fowl not considered in the preceding points. | - Shall be determined in each case by the Department. |

The vehicles used for the transportation of birds, shall be washed and disinfected before and after each shipment.

13.1.2. ORIGIN: Control zone

DESTINATION: Free or in eradication zone

- | REASON OF MOVEMENT | REQUISITES |
|--|---|
| a) Less than 3 day old birds for breeding | - Document of proof of free from Avian Salmonellosis flock.
- Animal Sanitary Certificate. |
| b) Less than 3 day old re-population and broiler birds | - Document of proof of free from Avian Salmonellosis flock. |

- Animal Sanitary Certificate.
- c) More than 3 day old re-population and broiler birds.
 - Animal Sanitary Certificate.
 - Document of proof of free from Avian Salmonellosis flock or farm.
- d) Slaughter birds
 - Document of proof of free from Avian Salmonellosis flock or farm.
 - Animal Sanitary Certificate.
- e) Fighting cocks
 - Document of proof of free from Avian Salmonellosis flock, farm or enterprise.
 - Animal Sanitary Certificate.
- f) Exhibition and fair birds
 - Document of proof of free from Avian Salmonellosis flock, or enterprise, except when they come from free regions or states.
 - Animal Sanitary Certificate.
- g) Birds of song and ornament
 - Document of proof of free from Avian Salmonellosis flock, farm, or enterprise.
 - Animal Sanitary Certificate.
- h) Wild birds and other domesticated fowl not considered in the preceding points.
 - Shall be determined in each case by the Department.

The vehicles used for the transportation of birds, shall be washed and disinfected before and after each shipment.

13.1.3. ORIGIN: Eradication zone
 DESTINATION: Control zone

REASON OF MOVEMENT	REQUISITES
a) Less than 3 day old birds for breeding	- Document of proof of free from Avian Salmonellosis flock. - Animal Sanitary Certificate.
b) Less than 3 day old re-population and broiler birds	- Document of proof of free from Avian Salmonellosis flock. - Animal Sanitary Certificate.
c) More than 3 day old re-population and broiler birds.	- Animal Sanitary Certificate.
d) Slaughter birds	- Animal Sanitary Certificate.
e) Fighting cocks	- Document of proof of free from Avian Salmonellosis flock, farm or enterprise. - Animal Sanitary Certificate.
f) Exhibition and Fair birds	- Document of proof of free from Avian Salmonellosis flock, farm or enterprise, except if they come from free regions or states - Animal Sanitary Certificate.
g) Song and Ornament birds	- Document of proof of free from Avian Salmonellosis flock, farm or enterprise.

- Animal Sanitary Certificate.

h) Wild birds and other domesticated fowl not considered in the preceding points.

- Shall be determined in each case by the Department.

The vehicles used for the transportation of birds, shall be washed and disinfected before and after each shipment.

13.1.4. ORIGIN: Eradication zone

DESTINATION: Free or eradication zone

REASON OF MOVEMENT	REQUISITES
a) Less than 3 day old birds for breeding	<p>- Document of proof of free from Avian Salmonellosis flock.</p> <p>- Animal Sanitary Certificate.</p>
b) Less than 3 day old re-population and broiler birds	<p>- Document of proof of free from Avian Salmonellosis flock.</p> <p>- Animal Sanitary Certificate.</p>
c) More than 3 day old re-population and broiler birds.	<p>- Animal Sanitary Certificate.</p> <p>- Document of proof of free from Avian Salmonellosis flock or farm.</p>
d) Slaughter birds	<p>- Document of proof of free from Avian Salmonellosis flock or farm.</p> <p>- Animal Sanitary Certificate.</p>
e) Fighting cocks	<p>- Document of proof of free from</p>

Avian Salmonellosis flock,
farm or enterprise.

- Animal Sanitary Certificate.

f) Exhibition and
Fair birds

- Document of proof of free from
Avian Salmonellosis flock,
farm or enterprise, except if
they come from free regions or
states

- Animal Sanitary Certificate.

g) Song and Ornament
birds

- Document of proof of free from
Avian Salmonellosis flock,
farm or enterprise.

- Animal Sanitary Certificate.

h) Wild birds and other
domesticated fowl not
considered in the
preceding points.

- Shall be determined in each
case by the Department.

The vehicles used for the transportation of birds, shall be washed and disinfected before and after each shipment.

13.1.5. ORIGIN: Free zone

DESTINATION: Free, in eradication or control zone

REASON OF MOVEMENT

REQUISITES

a) Less than 3 day old
Avian Salmonellosis flock.

- Animal Sanitary Certificate.

b) Less than 3 day old
re-population and
broiler birds

- Animal Sanitary Certificate.

- c) More than 3 day old re-population and broiler birds. - Animal Sanitary Certificate.
- d) Slaughter birds - Animal Sanitary Certificate.
- e) Fighting cocks - Animal Sanitary Certificate.
- f) Exhibition and Fair birds - Animal Sanitary Certificate.
- g) Song and Ornament birds - Animal Sanitary Certificate.
- h) Wild birds and other domesticated fowl not considered in the preceding points. - Shall be determined in each case by the Department.

The vehicles used for the transportation of birds, shall be washed and disinfected before and after each shipment.

13.1.6. The birds for fighting, fairs, exhibitions, song and ornament as referred to in the points 13.1.1., 12.1.2., 13.1.3., and 13.1.4., will not lose their place of origin if they do not remain more than 30 days at their place of destination; so that they can return to their place of origin, provided that they are tested and the bacteriological results are negative to *S. pullorum* and *S. gallinarum*. The tests shall be done before the movement of birds to their place of destination. Document of proof of in control or free from Avian Salmonellosis flock, farm or bird, except for those birds whose origin is in free states, then they shall only show their Animal Sanitary Certificate.

13.2. The movement of avian products shall be regulated in all the national territory taking into account the zone of origin, and destination, the reason for the movement and the requisites that are hereunder stated:

13.2.1. ORIGIN: Control zone
DESTINATION: Control zone

REASON OF MOVEMENT	REQUISITES
a) Fertile eggs:	<ul style="list-style-type: none">- Document of proof of free or in control of Avian Salmonellosis flock.- Animal Sanitary Certificate.
b) Table eggs:	<ul style="list-style-type: none">- Animal Sanitary Certificate.
c) Meat and eggs for industrial purposes:	<ul style="list-style-type: none">- Document of proof of free or in control from Avian Salmonellosis flock; or cooked before during 10 min. at 60°C or gamma irradiated, or pasteurized.- Animal Sanitary Certificate.
d) Meat in carcasses or pieces thereof:	<ul style="list-style-type: none">- Animal Sanitary Certificate.
e) Salted meat:	<ul style="list-style-type: none">- Animal Sanitary Certificate.- Meat must be covered by a thin layer of NaCL grains or powder up to 10% of the weight of the meat, or remains and presented in separate individual parts or fractions.
f) Meat or remains in brine:	<ul style="list-style-type: none">- Animal Sanitary Certificate.

f) Sausages

- Impregnated in a 10% saturated solution of water and NaCl.

- Document of proof of free or in control from Avian Salmonellosis flock, or cooked before during 10 min. at 60°C or gamma irradiated, or pasteurized.

- Animal Sanitary Certificate.

- Comply with the requirements of said process.

g) Canned products

- Sterile

- Animal Sanitary Certificate.

The vehicles used for the transportation of products, shall be washed and disinfected before and after each shipment.

13.2.2. ORIGIN: Control and in eradication zone
DESTINATION: Free or in eradication zone

REASON OF MOVEMENT

REQUISITES

a) Fertile eggs:

- Document of proof of free from Avian Salmonellosis flock.

- Animal Sanitary Certificate.

b) Table eggs:

- Document of proof of free from Avian Salmonellosis flock.

- Animal Sanitary Certificate.

c) Meat and eggs for industrial purposes:

- Document of proof of free from Avian Salmonellosis flock; or previously cooked during 10 min. at 60°C

or gamma irradiated, or
pasteurized.

- Animal Sanitary Certificate.

d) Salted meat:

- Document of proof of free from
Avian Salmonellosis flock or
farm.

- Animal Sanitary Certificate.

- Meat must be covered by a thin
layer of NaCl grains or powder
up to 10% of the weight of the
meat, or remains and presented
in separate individual parts
or fractions.

e) Meat or remains
in brine:

- Document of proof of free from
Avian Salmonellosis flock or
farm.

- Animal Sanitary Certificate.

- Impregnated in a 10% saturated
solution of water and NaCl.

f) Sausages

- Document of proof of free
from Avian Salmonellosis
flock or farm, or previously
cooked during 10 min. at 60°C
or gamma irradiated, or
pasteurized.

- Animal Sanitary Certificate.

g) Canned products

- Sterile

- Animal Sanitary Certificate.

The vehicles used for the transportation of products, shall be washed and disinfected before and after each shipment.

All documents of proof or laboratory results shall be signed and sealed by the approved or official Veterinary Doctor.

13.2.1. ORIGIN: Free zone

DESTINATION: Free, in Eradication or Control zone

REASON OF MOVEMENT	REQUISITES
a) Fertile eggs:	- Animal Sanitary Certificate.
b) Table eggs:	- Animal Sanitary Certificate.
c) Meat and eggs for industrial purposes:	- Animal Sanitary Certificate.
d) Meat in carcasses or pieces thereof:	- Animal Sanitary Certificate.
e) Salted meat:	- Meat must be covered by a thin layer of NaCl grains or powder up to 10% of the weight of the meat, or remains and presented in separate individual parts or fractions. - Animal Sanitary Certificate
f) Meat or remains in brine:	- Animal Sanitary Certificate. - Impregnated in a 10% saturated solution of water and NaCl.

g) Sausages: - Animal Sanitary Certificate.

h) Canned products - Sterile

- Animal Sanitary Certificate.

The vehicles used for the transportation of products, shall be washed and disinfected before and after each shipment.

13.3. The movement of avian by-products shall be regulated in all the national territory taking into consideration the origin and destination, reason for the movement and requisites thereof that are the following:

13.3.1. ORIGIN: Control zone:

DESTINATION: Control zone:

REASON FOR MOVEMENT

REQUISITES

a) Manure with or without
litter, viscera, bedding

- Animal Sanitary Certificate

13.3.2. ORIGIN: Control or in eradication zone:

DESTINATION: Free or in eradication zone:

REASON FOR MOVEMENT

REQUISITES

a) Manure with or without
litter, viscera, bedding

- Movement prohibited

13.3.3. ORIGIN: In eradication zone:

DESTINATION: Control zone:

REASON FOR MOVEMENT

REQUISITES

a) Manure with or without
litter, viscera, bedding

- Animal Sanitary Certificate

13.3.4. ORIGIN: Eradication zone:
DESTINATION: Free zone:

REASON FOR MOVEMENT

REQUISITES

a) Manure with or without
litter, viscera, bedding

- Movement prohibited

13.3.5. ORIGIN: Free zone:
DESTINATION: Free, in eradication or control zone:

REASON FOR MOVEMENT

REQUISITES

a) Manure with or without
litter, viscera, bedding

- Animal Sanitary Certificate

The movement of manure from chicks or hens must be done in closed vehicles or in sacks.

13.4. The movement of avian equipments shall be regulated in all the national territory taking into consideration the zone of origin and destination, reasons for the movement and requisites as hereunder stated:

13.4.1. ORIGIN: Control zone:
DESTINATION: Control zone:

REASON FOR MOVEMENT

REQUISITES

a) Chick boxes, or egg
cartons that are of
discardable material

- None

b) Used avian equipments

- None

13.4.2. ORIGIN: Control and in eradication zone:
DESTINATION: In eradication zone:

REASON FOR MOVEMENT

REQUISITES

- | | |
|---|--|
| a) Chick boxes, or egg
cartons that are of
discardable material | - Movement prohibited |
| b) Used avian equipments | - Disinfected under the
supervision of an approved
or official Veterinary Doctor |

13.4.3. ORIGIN: Free zone:

DESTINATION: Free, in eradication or control zone:

REASON FOR MOVEMENT	REQUISITES
a) Chick boxes, or egg cartons that are of discardable material	- None
b) Used avian equipments	- None

13.5. The movement of avian meals shall be regulated in all the national territory taking into consideration the zones of origin and destination, the reasons for the movement and the requisites hereinafter stated, provided that their use be exclusively be for birds y they shall not be subjected previously to any bacteriological control procedure:

13.5.1. ORIGIN: Free, in eradication or control zone:

DESTINATION: Free, in eradication or control zone:

REASON FOR MOVEMENT	REQUISITES
a) For consumption and industrialization:	- In sacks - Negative bacteriological results to <i>S. pullorum</i> and <i>S. gallinarum</i> , by lot, by an approved or official laboratory.

14. EPIDEMIOLOGICAL SURVEILLANCE

14.1. The report of diseases that are considered as reportable by law must be done following the provisions of the Federal Animal Health Act.

14.2. In the case of an outbreak in a farm or a positive bacteriological isolation for *S. pullorum* and *S. gallinarum*, the owner of the birds as well as the approved Veterinary Doctor and/or the one responsible for the farm or the laboratory, as it so corresponds, shall be obligated to immediately notify such a case to the Ministry.

14.3. In regions, states and zones in eradication or free from Avian Salmonellosis, it is the responsibility of the federal and state governments, as well as the owners or producers of birds and the approved Veterinary Doctors to execute the epidemiological surveillance of all suspected or confirmed Avian Salmonellosis cases.

Said surveillance shall be done through the verification of birds, their products and by-products, as well as the official documentation that is required for their mobilization from control or eradication areas to areas in eradication or free, as well as, by bacteriological monitoring, performed every semester or annually by the federal and state governments, as well as the organized producers and those sectors related to the avian industry, abiding by the provisions under the accords and covenants that to that effect shall be signed.

15. LOCALIZATION OF AVIAN ENTERPRISES, HATCHERIES, SLAUGHTER HOUSES, PACKERS, SIEVERS AND FEED PRODUCERS.

The provisions relative to this point shall be applicable to the new units that are being planned or are in the process of being established.

15.1. In order to establish a farm of primary or multiplier breeders and specific pathogen free birds, there must be a distance of 5 to 10 km. from these farms to the nearest avian, porcine or cattle enterprise, including slaughter houses, feed and other by-products processing plants. This distance shall also be applied to human habitations where domesticated birds are reared.

The distance can be modified taking into consideration the existent dominance of winds and the topography of the terrain.

15.2 For farms of broilers, commercial layers, turkeys for fattening, the distance shall be of 1 to 3 km between these and other avian, porcine and cattle enterprises, susceptible of modification according to the dominant winds and the topography.

15.3. The hatcheries should be at least 2 km from any other avian, porcine and cattle enterprises. This distance shall also be applied to human habitations where domesticated birds are reared.

15.4. The slaughter houses and packing houses must have at least 2 kms from other avian, porcine and cattle enterprises.

15.5. The feed producing plants shall be established at least 500 meters away from other avian, porcine and cattle enterprises.

15.6. For the sanitary control of waste (mortality and garbage), there must be available one of the following elimination methods.

- a) Incinerating furnaces
- b) Rendering plants
- c) Sanitary burial
- d) Others that the Department may so deem it

15.7. For rendering, sieving and agricultural use of chicken and hen manure, with bedding, there must be a minimum distance of 5 km in relation to other avian enterprises, that is susceptible of being modified taking into consideration the dominant winds and the topography.

For the agricultural use of the chicken and hen manure, there must be a minimum distance of 5 km between the land to be fertilized and the avian farms and provided they have previously obtained authorization by the owner of the farm.

15.8. To render and sieve chicken and hen manure there must be a minimum distance of 1 km in relation to federal and state highways.

16. IMPORTS

16.1. For imports of domestic, wild or foreign birds, the Animal Sanitary Certificate of origin shall be shown in it, it shall be indicated that they come from a country, state, region, farm and/or hatchery free from Avian Salmonellosis.

16.2. For imports of products and by-products of avian origin it will be necessary to show the Animal Sanitary Certificate of Origin and it shall indicate that said products and by-products come from healthy animals, that were inspected before and after their death in Federal Inspection Type enterprises (TIF).

16.3. The Ministry reserves the right to verify by laboratory tests that it so deems necessary, the veracity of the data on the sanitary certificates.

16.4. For exports of domestic, wild and foreign birds, as well as of products and by-products of the same, the exporter shall comply with the requisites established by the importing country.

17 SANCTIONS

The non-compliance with the requirements contained in this Standard shall be sanctioned under the provisions of the Federal Animal Health Act and the Federal Weights, Measures and Standards Act.

18. CONCORDANCE WITH INTERNATIONAL STANDARDS

This Mexican Regulatory Standard is not equivalent to any international standard.

19. BIBLIOGRAPHY

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DISEASES OF POULTRY. Pomeroy, B.S. and K.V. Nagaraja Fowl Typhoid. Ed Calnek B.W. et al., 9th Ed. Iowa State University Press, Ames, Iowa USA pp87-88, 1991.

INSTRUCTIVO TECNICO PARA LA CAMPAÑA NACIONAL CONTRA LA SALMONELOSIS AVIAR Secretaria de Agricultura y Recursos Hidráulicos. 1991, México, D.F.

20. TRANSITORY PROVISIONS

This Standard shall come into effect the following day after its publication in the Official Federal Gazette.

Effective Suffrage. No Reelection.

México, D.F. on the 26th of July of 1994.- The General Law Department, Guillermo Colín Sánchez.- Signature.

ATTACHMENT 7

Ministry of Agriculture and Rural Development

Official Mexican Standard NOM-037-ZOO-1995, National Classical Swine Fever Campaign

On the margin a seal with the national coat of arms and the words United Mexican States – Ministry of Agriculture and Rural Development

OFFICIAL MEXICAN STANDARD NOM-037-ZOO-1995, NATIONAL CLASSICAL SWINE FEVER CAMPAIGN

ROBERTO ZAVALA ECHAVARRRÍA, Legal Counsel of the Ministry of Agriculture and Rural Development, based on Articles 1 and 3, Article 4, Section III, and Articles 12, 21, 31, 32, 33 and 34 of the Federal Animal Health Act; Article 38, Section II, and Articles 40, 41, 43, and 47, Section IV of the Federal Measurements and Standards Act; Article 35, Section IV of the Federal Public Administration Organic Law; and Articles 2, 3, 5, 9, 17, 18, and 19 of the Regulations of the United Mexican States Plant and Animal Health Act, as it applies to the movement of animals and animal products; and Article 12, Sections XXIX and XXX of the internal regulations of this Agency, hereby issues the following:

WHEREAS

It is the function of the Ministry of Education and Rural Development to promote livestock production and, consequently, to control and eradicate pests and diseases which, like classical swine fever (CSF), affect the national livestock industry, both as regards production levels and product quality; and

Because of the economic importance of swine production in our country it ranks second in terms of tons of meat produced in the country, and that with the purpose of increasing production and improving the quality of pork products it is necessary to control and eradicate this disease, thus allowing the national swine industry to operate under better health conditions, and that for this reason a program must be established with the collaboration of all sectors involved in this activity, and consequently to seek the support and collaboration of said sectors; and

CSF is a highly communicable disease that spreads rapidly in susceptible swine, with variable morbidity and mortality that depend on the virulence of the virus strain and the degree of susceptibility of the herd; and

CSF represents the most important limitation to the development of the national swine industry and restricts its exportation potential since many countries interested in acquiring pork produced in Mexico make commercial deals depend on freedom from CSF.

For these reasons, on October 11, 1995, a draft version of Official Mexican Standard NOM – 037 – ZOO -1995, National Classical Swine Fever Campaign, was published in the **Federal Gazette** and the answers to the comments in regard to this Draft were published in the same Federal Gazette on August 26, 1996.

That, by virtue of the legal procedure set forth in the above paragraph, certain points of the Draft were revised, as deemed necessary, and the present Official Mexican Standard

NOM – 037 – ZOO -1995, National Classical Swine Fever Campaign has now been issued.

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18. TRANSITORY PROVISIONS

1. Objective and Scope

- 1.1 Observance of this Standard is mandatory throughout the country, and its objective is to diagnose, prevent, control and eradicate classical swine fever in the entire nation and is to be applied in all areas of the swine industry.
- 1.2 Oversight of this Standard is the responsibility of the Ministry of Agriculture and Rural Development and of State governments, within the scope of their respective powers and territorial limits, according to the relevant coordination agreements.
- 1.3 Enforcement of this Standard is the responsibility of the General Animal Health Directorate and of the Delegate of the Ministry of Agriculture and Rural Development, within the scope of their respective powers and territorial limits.

2. References

For proper enforcement of this Standard, the Official Mexican Standards listed below must be consulted:

NOM-003-ZOO-1993, Criteria for the Operation of Approved Test Laboratories in the Field of Animal Health.

NOM-007-ZOO-1994, National Aujeszky Disease Campaign

NOM-036-ZOO-1996, Classical Swine Fever Vaccine Minimum Requirements.

3. Definitions

For the purposes of this Standard, the following Definitions will apply:

- 3.1 **Focal Area:** Area in which swine with classical swine fever virus infections and all other swine, inputs, material and equipment in contact with any such, are subject to observation and isolation.
- 3.2 **Perifocal Area:** Area in which surveillance is in effect with the purpose of detecting the presence of classical swine fever.
- 3.3 **Outbreak:** Presence of one or more CSF cases, proven by immunofluorescence diagnosis, and/or an immunoenzyme assay test, with the possibility of spreading within the same production unit, region, or zone.
- 3.4 **Cold Chain:** Procedure by which the quality and efficacy of biological products is assured from the point of origin to the point of use.
- 3.5 **Campaign:** The National Classical Swine Fever Campaign
- 3.6 **Case:** A hog or group of hogs with positive test results for classical swine fever by means of an immunofluorescence test and an immunoenzyme assay.
- 3.7 **Vaccination Certificate:** An official document issued when CSF vaccination of hogs is satisfactorily completed.
- 3.8 **Free Farm Certificate:** An official document that shows that the swine production unit has complied with the diagnostic tests and biosecurity measures specified by the campaign.
- 3.9 **Control:** Set of zoosanitary measures with the purpose of reducing the incidence or prevalence of classical swine fever in a given geographical area.
- 3.10 **Quarantine:** Zoosanitary measure based on isolation, observation and restriction of movement of animals, animal products and byproducts, wastes and implements used in the swine industry because of the suspicion or existence of classical swine fever.
- 3.11 **Precautionary Quarantine:** Zoosanitary measure based on isolation, observation and restriction of movements of animals, animal products and byproducts, wastes and implements used in the swine industry because of the suspicion of classical swine fever (CSF). Applied on a temporary basis until obtention of laboratory test results that either confirm or rule out a diagnosis of CSF.
- 3.12 **Organic Wastes:** All residues derived from the activity of the production unit, like droppings, urine, fetuses, carcasses, viscerae, blood, bedding and feed.
- 3.13 **Disinfection:** Procedure carried out after cleaning up with the intention of destroying the pathogens that cause animal diseases and applied to the premises, vehicles and various objects that may be directly or indirectly contaminated by the animals or animal products.

- 3.14 **Directorate:** The General Animal Health Directorate.
- 3.15 **Diagnosis:** A study based on the analysis of the set of clinical signs found in the swine and that makes it possible to suspect or confirm the presence of classical swine fever, the latter by means of laboratory tests.
- 3.16 **Epizootic:** A disease (classical swine fever) that appears in swine for a given period with a higher than expected frequency.
- 3.17 **Eradication:** Total elimination of classical swine fever from a given geographical area.
- 3.18 **Leftovers:** Left over food or slops used to feed hogs.
- 3.19 **CSF:** Classical Swine Fever
- 3.20 **Classical Swine Fever, formerly called "Hog Cholera":** A highly contagious disease caused by a virus of the togaviridae family, that generally follows an acute course but may present in atypical forms. In the typical form the hogs may exhibit anorexia, fever of 41°C or higher, muscle tremors, prostration, intestinal constipation alternating with diarrhea, mucopurulent discharge from the eyes and skin erythema. In the final stages of the disease there may be nervous disorders, paralysis and, lastly, death.

In the atypical form caused by so-called low virulence strains, the signs observed may include the following:

- Congenital tremor, also called congenital myoclonia or jumping pigs which is found in newborn piglets or a few hours after birth and is characterized by trembling of the head, neck, back, and hind legs.
- Disease of the newborn by contagion from unvaccinated dams. These piglets die of acute CSF without the disease affecting the sows and by healthy hogs vaccinated with a modified live virus, with the characteristic that only young animals are affected.

This definition does not exclude the existence of other forms of CSF.

- 3.21 **Focus:** This term designates the appearance of one or more CSF cases on a hog farm.
- 3.22 **Incidence:** Number of new CSF cases during a specific period in a given geographical area.
- 3.23 **Standard:** The Official Mexican Standard for the National Classical Swine Fever Campaign.
- 3.24 **Approved Veterinarian:** A professional recognized by the Ministry of Agriculture and Rural Development to carry out official activities in animal health matters.
- 3.25 **Official Veterinarian:** A professional on the staff of the Ministry of Agriculture and Rural development.

- 3.26 **Biosecurity Measures:** The set of procedures implemented to prevent introduction of the CSF virus to swine production units; or the exit and destruction of said virus when a unit becomes infected.
- 3.27 **National CSF Emergency Plan:** The official document issued by the Directorate for implementation in CSF free zones and zones under eradication.
- 3.28 **Prevention:** A set of zoosanitary measures based on epizootiological studies and intended to prevent the presence of CSF.
- 3.29 **Procedure or Phase:** a set of activities carried out in a sequential strategic way and necessary to eradicate CSF.
- 3.30 **Products:** Goods resulting from a production process and which consist of achieving the principal object of the swine farming operation.
- 3.31 **Biological Products:** Biological reagents, sera, vaccines, and microbial genetic material of animal origin that may be used in the diagnosis, treatment or prevention of animal diseases.
- 3.32 **Region:** A geographical area whose boundaries are to be determined by the Directorate and where the installation of temporary or permanent quarantine measures should be guaranteed in case of appearance of CSF outbreaks. One or more regions may be set up in a given zone as considered advisable by the Directorate to ensure the efficiency of the quarantine measures taken.
- 3.33 **Ministry:** The Ministry of Agriculture and Rural Development.
- 3.34 **CSF Suspects:** This term is applicable to the hog or group of hogs exhibiting clinical signs of any of the red swine diseases, including CSF.
- 3.35 **By-product:** Obtention of a good derived from a principal objective and which may be a processed good or a waste product of the hog farm.
- 3.36 **SPU:** Swine production unit
- 3.37 **Vaccine:** A vaccine lot checked and approved by the Directorate.
- 3.38 **Official Vaccination:** The procedure of applying a biological product used to prevent and control the presence of CSF and which is to be supervised and/or effected by an official or approved veterinarian.
- 3.39 **Control Zone:** A given geographical area in which zoosanitary measures are applied with the intention of reducing the incidence or prevalence of CSF in a specific period.
- 3.40 **Eradication Zone:** A given geographical area in which preventive zoosanitary measures are implemented after eliminating the CSF virus and in which epizootiological surveys are carried out by the Directorate to check that there has been

no CSF in the past twelve months, and that the procedures for this campaign phase have been duly completed.

- 3.41 **Free Zone:** A given geographical area from which CSF has been eliminated, or in which no positive cases have been found for 24 months, according to the Directorate's epizootiological surveys and records.

4 General Provisions.

- 4.1 The campaign is basically directed to domestic swine, regardless of the kind of farming operation involved. However, as regards wildlife, the Ministry will determine the species to which this standard is to be applied, for the time and in the places indicated, and for whatever reasons it is deemed necessary.
- 4.2 The responsibility for the campaign's operation in all the States should be shared by the Federal Government, the State Governments, the Livestock Protection and Promotion Committees, the Swine Farmer Unions and Associations, producers, owners, dealers, carriers, businesses, industrialists and other individuals and organizations connected to or involved in swine production, as appropriate according to the activities of each.
- 4.3 The protection of CSF free or under eradication states, regions or zones, will be carried out through a strict control of the movements of swine or pork products or byproducts.
- 4.4 The use of untreated leftovers or slops for feeding pigs is forbidden.
- 4.5 State governments should participate in the establishment, remodeling, adapting, construction and operation of animal health checkpoints within and between states. The provisions and procedures of this Standard should be applied in such checkpoints as regards the movement of swine and pork products and byproducts.
- 4.6 The state Livestock Protection and Promotion Committees, the CSF Campaign Subcommittees, the Regional Livestock Producer Unions and local Swine Farmer Associations, and the process industry sector connected with the country's swine industry, acting in coordination with the Ministry and state governments, will participate in the consolidation of Campaign actions, including actions related to social communication.
- 4.7 The entry of swine, pork products and byproducts from controlled zones or states into CSF free or eradication zones or states is forbidden, except when otherwise authorized by the Ministry.
- 4.8 Acting in coordination with the state government and based on a risk assessment study and an analysis of veterinarian services in the state, such as: diagnostic laboratories, animal movement checkpoints, State Emergency Animal Health Groups (GRESA), contingency funds and epizootiological surveillance systems, the Ministry may establish CSF free or eradication regions or zones within a state or groups of states in the control phase.

4.9 This Standard will remain in effect until the entire country is declared free of CSF.

5 CAMPAIGN PHASES

5.1 The Campaign is composed of Control, Eradication and Free phases, which may be in effect at the municipal, regional or state levels. For the purposes of this standard, the terms Phase and Zone are equivalent.

5.2 Control Phase;

For a state or zone to be considered in the control phase, the following requirements must be met:

- a) Intensive vaccination in high risk and high swine population zones;
- b) Control of movements of swine and of pork products and byproducts;
- c) Existence of an effective system for epizootiological surveillance, CSF foci reporting, laboratory diagnosis facilities and outbreak control;
- d) The use of leftovers or slop to feed swine is forbidden unless they have been cooked for thirty minutes at 100°C;
- e) In this phase the Directorate may implement a monitoring and sentinel program based on evidence of CSF epizootiological behavior; and
- f) Existence of an SPU and swine population census.

5.3 Eradication phase.

For a state or zone to move from the CSF control phase to the eradication phase, the requirements set forth in point 5.2 must be fulfilled, in addition to:

- a) Suspension of marketing and use of CSF vaccines.
- b) Absence of CSF foci or outbreaks during the past 12 months.
- c) Existence of epizootiological surveillance systems and the Animal Health Emergency Mechanism.
- d) Reinforcement of the quarantine control system through the establishment and operation of check points along the main routes of entry to the state or region.
- e) Existence of an emergency insurance program or contingency fund for CSF outbreaks, with the participation of swine producers and the state and Federal governments.
- f) The use of leftovers or slops to feed swine is forbidden.
- g) Implementation of a sentinel program.
- h) Six months after a zone has moved from the CSF control phase to the eradication phase a representative sample of swine in the area should be taken. The sampling program will be planned and carried out by the Ministry, working in coordination with producers and state governments.

The samples may be tested using any of the techniques specified in point 8 of this standard.

The Ministry's Delegate's Office in the state should draw up a list of all the swine farms in the state with the following information: name of the farm, location, owner, type of operation and population in each state, and marketing information.

Based on evidence of the CSF epizootiological behavior, the Directorate may, at its discretion, omit one or more of the procedures indicated to officially recognize an eradication zone.

5.3 Free Phase.

- a) For a State, zone or region in the eradication phase to move into the free phase, in addition to having completed the actions described in the above point, it should have been in the eradication phase for twelve months, and should have complied with the absence of disease, foci or outbreaks during the past twenty-four months, and should have carried out whatever epizootiological surveys are indicated by the Directorate.
- b) The verification procedures to be used in this Campaign include serological sampling surveys every six or twelve months, which are to be scheduled and carried out by the Ministry working in coordination with state governments and private individuals.

The samples may be tested by means of any of the techniques specified in point 8 of this Standard.

A zone or state will be declared free of CSF by means of a Resolution of the Secretary of Agriculture and Rural Development published in the **Federal Gazette**.

- c) The presence of a CSF outbreak in a free zone will cause temporary loss of a free-zone status, which may be regained when the Directorate, based on epizootiological studies, declares the absence of CSF virus.
- d) The use of leftovers or slops to feed swine is forbidden.

6 Vaccines

6.1 The only vaccines used in the Campaign shall be those that are checked and authorized by the Ministry and are to be used in high-risk zones, as determined by the Ministry.

6.2 Vaccine handling.

A point to be taken into account for appropriate immunization of swine is the handling of the vaccine and its conservation in a so-called cold chain.

Vaccines should be handled according to the following indications:

- a) CSF vaccines should be stored in refrigerators or cold rooms at a temperature between 2 and 4°C, and this temperature should be maintained during the vaccine's transportation.

As part of their refrigeration equipment, the facilities of CSF vaccine distributors should include thermographs and standby electric power equipment.

- b) Refrigeration between 2 and 4°C.

- c) Prevention of exposure to sunlight.
 - d) Prevention of freezing.
 - e) Open vials or vials with broken lids should not be stored.
 - f) Extreme temperature fluctuations should be avoided.
 - g) Any blow to the vials should be avoided.
 - h) The manufacturer's indications should be precisely followed.
 - i) A fresh needle should be used for each application.
 - j) Disposable syringes should be used.
 - k) No alcohol or disinfectants should be used as they inactivate the virus.
 - l) CSF vaccine distributors should have an approved veterinarian with the responsibility of keeping a record book with data on the quantity and the number of the vaccine lots in storage; to verify that thermograph readings are within the temperature range specified in paragraph a) of this point, the lot expiration date, and monitoring of the vaccines' distribution.
- Careful handling of vaccines will ensure protection of animals from CSF.

6.3 Vaccination Calendar:

The vaccination calendar to be implemented by hog owners will be determined by the approved veterinarian based on the geographical zone, the form of the disease, and the type of vaccine used.

6.4 Vaccination Record Book and Certificates

6.4.1 In order to obtain a vaccination certificate, each farm should have a vaccination record book authorized by the Ministry State Delegate's Office which should contain the following information:

- a) Date of vaccination
- b) Total number of animals in each stage: sucklings, breeding sows, sires, growth and replacement.
- c) Trademark of the vaccine used, lot number and expiration date.

The farm should keep a copy of all vaccination certificates.

6.4.2 For rural swine production, vaccination certificates should contain the following information:

- a) Sequential page number.
- b) Number of vaccinated pigs
- c) Owner's name.
- d) Location of the farm, specifying the State and Municipality.
- e) Effective duration of the certificate.
- f) Name and signature of the person who vaccinated the animal
- g) Name, seal and signature of the approved veterinarian
- h) Hogs vaccinated for CSF may only be slaughtered after 15 days from the date of vaccination.

6.4.3 The vaccination certificates will have an effective duration of six months from the date on which the hogs were vaccinated, and this date is to be recorded on said certificates.

The certificates will be supplied by the state delegate's office of the Ministry and are to be used by official or approved veterinarians.

The certificates will be given to persons authorized by official or approved veterinarians to perform vaccination; and the sequential page numbers they are given, and the amount of vaccine they acquire will be noted.

The vaccination certificates will be turned over by the person who vaccinates the animals to the hog owner. The forms should be filled in by the vaccinator and signed by an official or approved veterinarian. The original will be given to the owner and the veterinarian will keep a copy for his or her records, control, supervision and evaluation of the report.

6.4.4 Each vaccinator should keep a vaccination book in which the information below is to be recorded:

- a) Name
- b) Address
- c) Number of hogs vaccinated and their zootechnical function
- d) Sequential page number of the certificates.

6.5 Vaccination Certificates

In high risk zones, as determined by the Ministry, swine farmers should keep the vaccination certificates so that they may request the zoosanitary certificate whenever they need to move their hogs. The vaccination certificates should be attached to the zoosanitary certificate.

The data on the vaccination certificate should be used to make out the zoosanitary certificate, so that the information will be the same. The applicant's name on the zoosanitary document should be the same as the name on the vaccination certificate.

Whenever animals or breeding stock are transported from high risk zones, as determined by the Ministry, group vaccination certificates will be issued for each lot of animals to be transported, and these should be stamped when they are delivered. The vaccination certificate should be stamped with a seal and should be attached to the zoosanitary certificate. The two documents should be presented whenever requested by the Directorate or the verification units for the purposes of an animal health inspection and documentation review.

When the swine transported from high risk zones, as determined by the Ministry, arrive at their destination, the person in charge of the shipment should deliver these documents and the vaccination certificates to the consignee. In the case of animals for slaughter, both documents should be delivered to the slaughterhouse veterinarian, or in his or her absence, to the manager or the person designated by the latter so that slaughter may be authorized. It is the obligation of the consignee of the swine shipment to comply with all procedures required for livestock movements.

6.6 Whenever CSF appears in a SPU in a control zone, it will be necessary to vaccinate and/or revaccinate all the swine on the farm, under the supervision of the official and/or approved veterinarian, in order to boost the immunity of exposed animals. Moreover, if

there is direct exposure to the CSF virus, CSF vaccines should be applied in the affected or perifocal area.

- 6.7 CSF vaccines should not be marketed or used in free or eradication zones and whenever the presence of vaccine lots is detected, the state Delegate's Office should seize and destroy such vaccines.

7. Epizootiological surveillance

CSF epizootiological surveillance consists of the following:

- Outbreak reporting;
- Epizootiological investigation; and
- Monitoring and sentinel programs.

7.1 Outbreak Reporting.

The activities described below should be carried out in order to create a systematic communications process to report any suspected outbreak of CSF and/or red swine diseases, as well as for control and eradication of classical swine fever.

Official and approved veterinarians in the zone, swine producers, vaccinators, and other persons directly involved should report any suspicious case of CSF or red swine diseases personally, by phone, telegraph or fax to the Directorate, the Ministry State Delegate's Office, the United States - Mexico Commission for Prevention of Foot and Mouth Disease and other Exotic Animal Diseases, state authorities, and local swine producer associations.

The report should contain the data indicated below:

- a) Name of the suspected disease
- b) Date of onset of the problem
- c) Name of the farm and the owner involved
- d) Location of the farm: town, municipality and state
- e) Affected species
- f) Total number of animals on the farm and number of sick and dead animals
- g) Zootechnical function: breeding, growing or mixed
- h) Type of farm operation: intensive, extensive or mixed
- i) Production type other than swine: meat, milk, eggs, dairy products, wool, honey, milk-meat, wool-meat, others
- j) Entry of animals to farm: date, place of origin and number
- k) Departure of animals from farm: destination and number
- l) Control measures taken: vaccination, chemotherapy, quarantine, others.
- m) Name of the person who makes the report
- n) Telephone number for reporting results

All reported SPUs will be officially investigated and the appropriate control measures will be applied, in addition to establishing a timely diagnosis to rule out red diseases like pasteurellosis, salmonellosis, erysipelas, and other viral, bacterial, parasitic, deficiency or toxic-origin diseases that may be clinically and pathologically confused with CSF.

7.2 Epizootiological Investigation

- 7.2.1 Epizootiological surveillance systems are a requirement for zones that enter the CSF free or eradication phase.
- 7.2.2 All zones admitted to the CSF free or eradication phase should have a special CSF active surveillance group made up of veterinarians engaged exclusively in CSF surveillance.
- 7.2.3 The special CSF active surveillance group should be formally hired by organized producers; and state or government official veterinarians may potentially be members of such groups.
- 7.2.4 These groups are to be supervised by the Ministry's veterinarians.
- 7.2.5 The special CSF active surveillance groups will have the following functions:
 - a) To continuously make the rounds of swine farms and rural and back yard operations, based on predetermined routes, in order to detect the existence of health problems, if any, that might be CSF.
 - b) To conduct surveys, meetings and discussions with swine farmers and persons or groups connected to swine production in order to gather and provide information about CSF in the zone.
 - c) To collect organ or serum samples, as the case may be, whenever there is a suspicion of a health problem that might be CSF or whenever sentinel animal studies are being made.
 - d) To immediately notify the Ministry or the state government authorities of any suspicion of CSF.
 - e) To establish coordination with slaughterhouses, TIF establishments, diagnosis laboratories and animal movement checking stations, in order to obtain timely information and to follow up as necessary.
 - f) To periodically inform the Ministry about the actions carried out.

7.3 Monitoring and Sentinel Program.

- 7.3.1 Serological monitoring of unvaccinated animals is to be carried out in CSF free, eradication or control zones, with the purpose of detecting the presence or absence of CSF evidence.
- 7.3.2 Working in coordination with state governments and producers, the Ministry shall determine the monitoring protocols, the sample size, and any special aspects and timing of the monitoring activity. The Ministry shall also follow up on results.
- 7.3.3 In all cases, the Ministry shall indicate the diagnosis laboratory or laboratories to which the samples are to be sent.
- 7.3.4 Sentinel program activities will be implemented in CSF control zones, in order to detect the presence or absence of the CSF field virus, both in zones where vaccination is practiced and those where it is not.

- 7.3.5 Working in coordination with the state government and producers, the Ministry shall determine the sentinel program protocols and shall follow up on results.
- 7.3.6 In all cases, the Ministry shall indicate the diagnosis laboratory or laboratories to which the samples are to be sent.

8. Diagnosis

The diagnosis of CSF in the case of outbreaks or suspected outbreaks, as well as for epizootiological monitoring, should be established by an official laboratory or one approved by the Ministry.

8.1 Laboratory tests to diagnose suspected CSF cases or outbreaks.

Because of the many variants in the clinical signs, blood values, and morphopathological changes that may be found in CSF cases, in the preliminary phase the diagnosis should be based on immunofluorescence tests on the tonsils of at least two hogs suspected of having CSF and on the observation of clinical signs and pathological changes characteristic of CSF.

The final or confirmatory diagnosis should be based on identification of the viral antigen by means of direct or indirect immunofluorescence tests, immunoenzyme assays, and the observation and description of gross and microscopic changes.

Any of the tests listed below may be selected for the diagnosis:

8.1.1 Direct immunofluorescence of specimens of the following organs:

- a) Tonsils (2 cm long x 0.5 cm. wide).
- b) Spleen (2 cm long x 0.5 cm. wide).
- c) 2 parotid or mandibular lymph nodes (1 cm. in diameter x 1 cm. thickness)

The specimens should be kept at a refrigeration temperature between 2 and 4°C.

The direct immunofluorescence test should be performed:

- With tonsil sections made with a cryostat at -20°C. The sections should be from 4 to 2 micras thick.
- After being fixed in acetone, the sections are to be stained with a CSF conjugate with a working titre of 1:4.
- The test should be read and interpreted under a fluorescence microscope.
- In order to make sure that the conjugate is in optimal condition, in addition to the target tonsil sections, a positive and negative control should be used, staining them at the same time as the target tonsil.
- The results of this test are to be expressed in terms of positive or negative for the presence of CSF virus.

8.1.2 Indirect immunofluorescence or virus isolation using tonsil, spleen, lymph node or kidney tissue.

The virus isolation or indirect immunofluorescence test is to be carried out as follows:

- A 10% suspension of the tonsil, spleen or lymph node specimens in minimal essential medium will be used;
- An amount of 0.5 ml. of the above suspension will be inoculated in PK-15 cell line cultures or a culture of another line with similar characteristics. The test tubes or slides that contain inoculated cells are to be incubated for 60 min. at 37°C.
 - The inoculum will be discarded and maintenance medium added after rinsing three times with maintenance medium.
 - This is to be incubated for two to five days at 37°C, after which it is washed three times with a buffer phosphate solution.
 - After this point, the procedure described earlier for the direct immunofluorescence technique as regards fixation and application of the conjugate will be followed.
 - The results of this test are to be expressed in terms of positive or negative for the presence of CSF virus.

8.2 Immunoenzyme assay techniques (ELISA) for detection of CSF virus antibodies in blood serum samples:

These tests can be used for the purpose of epizootiological monitoring.

a) The sample should have the following physical characteristics:

- Minimum amount of serum: 5 ml.
- Color: light yellow.
- Translucent.
- Absence of suspended particles.
- Odorless.

b) The serum should be placed in previously sterilized glass or plastic tubes or vials.

c) Each sample should be clearly identified with a sequential number written with indelible ink.

The samples should be kept in refrigeration between 2 and 7°C, or frozen at -5°C.

8.2.1. Immunoenzyme assay tests are to be carried out with serum samples from pigs suspected of having been exposed to the CSF virus. The only purpose of this test is to indicate the presence or absence of CSF virus specific antibodies.

8.2.2. In order to detect CSF antibodies with the immunoperoxidase technique, the following are required:

- a) Cell culture microplates with a single layer of the PK-15 cell line or some other cell line with similar characteristics infected with CSF virus.
- b) Porcine serum with CSF antibodies, a positive control and a CSF antibody-free porcine serum (negative control).
- c) "G" - peroxidase protein conjugate.
- d) Peroxidase indicator and substrate and buffer solutions.

This test must be read with an inverted microscope. Since it is a qualitative procedure, its results should be expressed as positive or negative for the presence of CSF antibodies. Sera that are found to be positive should be subjected to a viral interference or Newcastle disease virus exaltation test in order to determine the CSF antibody titre.

8.2.3 The ELISA technique for detection of CSF antibodies requires the following:

- a) Cell culture microplates with a single layer of the PK-15 cell line or some other cell line with similar characteristics infected with CSF virus.
- b) Porcine serum with CSF antibodies, a positive control and a CSF antibody-free porcine serum (negative control).
- c) Enzyme labeled anti-species immunoglobulin.
- d) Substrate.

This test is read with an ELISA scanner. The results are expressed only as positive or negative for CSF antibodies. Positive results should be subjected to a viral interference or Newcastle disease virus exaltation test in order to determine the CSF antibody titre.

8.3 Quantification of CSF virus specific antibodies in serum samples of hogs suspected of exposure to the CSF virus with the Newcastle disease virus exaltation method requires the following material:

- a) CSF suspect hog serum.
- b) CSF virus pathogen strain.
- c) Newcastle disease virus pathogen strain.
- d) Suspension of a primary culture of hog testicle or of a cell line with similar characteristics.

The result of this test is expressed as the neutralizing antibody titre, based on a record of the reciprocal of the highest serum dilution that provides complete inhibition of the cytopathic effect in one of two inoculated tubes.

8.4 An alternative to the quantification of CSF specific antibodies is the viral interference test with vesicular stomatitis virus or some other virus with cytopathic effect.

The latter test is carried out with the following material:

- a) CSF suspect hog serum.
- b) CSF virus pathogen strain.
- c) Pathogen strain of the vesicular stomatitis virus, or of another virus with cytopathic effect.

- d) Suspension of a primary culture of hog testicle or of a cell line with similar characteristics
- The result of this test is expressed as the neutralizing antibody titre.

8.5 Histopathology

The histopathology test can only be used for support, and not as a definitive test to establish a final diagnosis based on samples of the following organs:

- a) Half a brain cut lengthwise.
- b) Tonsil, lymph nodes, kidney, liver and spleen.- At least 0.5 to 1 cm. wide by 1 to 2 cm. long, and 0.5 to 1 cm. thick.

The samples should be fixed in a 10% formaldehyde buffer solution in a proportion of 10 parts of solution to 1 part of tissue.

The histopathology test is done on histological sections of the following organs processed with the routine technique of paraffin inclusion and stained with eosine-hematoxiline: a section of anterior, mid, and posterior brain; tonsil; lymph nodes; kidney; liver and spleen. The final result of the histopathology study should include one or more morphopathological diagnoses based on the description of microscopic changes.

9. Quarantine Measures.

For purposes of this Standard, quarantine measures are applied to living and dead animals, animal products and byproducts, and any food or inanimate object that represents an animal health risk.

- 9.1 Whenever there is any suspicion of CSF, the Ministry shall immediately impose a precautionary quarantine, which may be lifted if the official results of its investigation indicate that there is no CSF. Otherwise, the quarantine shall be definitive.
- 9.2 In the case of a CSF outbreak, confirmed by laboratory and epizootiological evidence, the Ministry shall impose a definitive quarantine.
- 9.3 The quarantine shall cover the focal and perifocal area, according to the Ministry's judgment, based on the epizootiological investigation carried out for the case in question.
- 9.4 In control zones, the definitive quarantine may be lifted after 20 days have passed without appearance of new CSF outbreaks or suspicion of any such.
- 9.5 In free or eradication zones, the quarantine shall be lifted after thirty days from completion of the zoosanitary measures and depopulation procedures set forth in point 10 of this standard.

- 9.6 In all cases, the quarantine should be officially imposed or lifted, indicating in the respective documents the appropriate zoosanitary measures and schedule.
- 9.7 Hogs and pork products and byproducts that fail to comply with the provisions of this Chapter will be held at checkpoints, and the Ministry will determine their final destination.
- 10. Outbreak Control.**
- 10.1 Control Zones.
- 10.1.1 Whenever CSF is suspected, the Ministry should be immediately notified after which, the Ministry, through the official veterinarians responsible for animal health, shall establish a precautionary quarantine in the focal and perifocal area, and shall conduct the appropriate investigation.
- 10.1.2 Upon confirmation by laboratory and epizootiological evidence of the existence of CSF in a zone or farm, the following zoosanitary measures should be applied on an emergency basis[
- a) The definitive quarantine of the exposed or affected premises in the focal and perifocal area, based on a prospective and retrospective epizootiological investigation that should be carried out at once by official veterinarians of the Ministry, with strict observance of biosecurity measures to prevent the spread of the disease.
 - b) Inventory of the affected, exposed and at risk swine population.
 - c) Focal and perifocal vaccination.
 - d) Sanitary disposal of dead animals by incineration or burial.
 - e) Killing of sick animals and sanitary disposal of the remains by incineration or burial.
 - f) Application of cleansing and disinfecting procedures of the infected units, as well as of vehicles and inanimate objects that represent an animal health risk.
 - g) Strict control over the issue of zoosanitary certificates for the movement of swine and pork swine products or byproducts in the focal and perifocal area, checking in every case that they do not originate in affected or exposed units. All zoosanitary certificates must be extended by official veterinarians.
 - h) Reinforcement of epizootiological surveillance in the focal and perifocal area.
- 10.1.3 All states in the country that may be at risk, according to the epizootiological investigation of the outbreak, should be notified of the existence of a CSF outbreak.
- 10.1.4 The quarantine shall be lifted after 21 days have passed without the presence of evidence or suspicion of CSF.

10.2 Free and Eradication Zones.

10.2.1 Whenever CSF is suspected, the Ministry should be immediately notified, after which, the Ministry, through the official veterinarians responsible for animal health, shall establish a precautionary quarantine in the focal and perifocal area, and shall conduct the appropriate investigation.

10.2.2 Upon confirmation by laboratory and epizootiological evidence of a CSF outbreak in a zone or farm, the following should be done:

- a) The Ministry should activate the National CSF Emergency Plan.
- b) The entire country should be immediately notified of the outbreak.
- c) Arrangements should be made for the participation and concerted action of state government and Ministry technicians and officials, producer organizations, livestock protection and promotion committees and subcommittees, swine farmers, industrialists connected to the swine production industry, carriers, and the general public, with the purpose of establishing an emergency committee, led by the Ministry, for eradication of the outbreak.

10.2.3. Emergency Zoosanitary Measures:

- a) Definitive quarantine of the affected, exposed and at risk farm or farms in the focal and perifocal area, as determined by the prospective and retrospective epizootiological investigation that should be immediately carried out in the zone, to be conducted by official veterinarians and with strict observance of biosecurity measures to prevent the spread of the disease.
- b) Determination of the extent of the outbreak in terms of the geographical area and swine population, based on procedures specified by the Ministry in the National CSF Emergency Plan. At the same time, sanitary disposal of the dead animals should be effected, and diseased animals should immediately be killed and subjected to sanitary disposal. Sanitary disposal should be carried out by incineration, burial or as determined by the Ministry.
- c) After having determined the extent of the outbreak in terms of geographical area and swine population, the financial and technical feasibility of depopulating affected and exposed units will be determined.
- d) If the extent of the outbreak, as determined, indicates that it is not technically and financially feasible to depopulate the affected or exposed units, the studies indicated by the Ministry shall be carried out to identify the boundaries of the affected area which will then be moved back to the control phase, implementing the procedures set forth in point 10.1.
- e) If the extent of the outbreak, as determined, indicates that it is technically and financially feasible to depopulate the affected and exposed units, depopulation will be carried out with the following provisions;

- I. Indemnity payments to affected producers according to the insurance scheme or contingency funds agreed to in each State.
- II. Depopulation procedures as indicated in the national CSF emergency plan.

10.2.4 National CSF Emergency Plan

This plan contains detailed information about the organization and actions that should be taken in case of a CSF outbreak when depopulation is to be carried out.

The CSF emergency plan contains the following points:

- a) Actions taken in the first days after the outbreak is reported.
- b) Quarantines.
- c) Organization of the emergency committee.
- d) Determination of boundaries of the affected area.
- e) Inspection procedures.
- f) Control measures for security of quarantine and protection zones.
- g) Biosecurity of production units.
- h) Movement of swine to slaughterhouse.
- i) Movement of products and byproducts
- j) Packing plans.
- k) Appraisal.
- l) Slaughter.
- m) Clean up.
- n) Disinfection.
- o) Repopulation.

10.2.5 After depopulation and repopulation, six months must pass without any evidence of CSF in order to officially recover the status of free or eradication zone. During this period epizootiological surveillance actions should be continuously and actively carried on.

11. Movements.

The following conditions should be considered and complied with for any movement of swine within the country:

- Origin and destination zones.
- Control zones.
- Eradication zones.
- Free zones.

Reason for movement:

- Breeding stock.
- Fairs and shows.
- Fattening.
- Slaughter.

In order to verify fulfillment of the procedures specified for the movement of swine and pork products and byproducts, the Ministry should put in place an origin -destination verification system and a zoosanitary certificate will always be required.

11.1 Movements of swine will be regulated throughout the country according to the origin and destination zones, the reasons for such movements and the requirements specified below:

a) Origin: Free zone.

Destination: Free or eradication zone

Slaughter:

- Zoosanitary certificate.
- Straps on vehicles only when the means of conveyance goes through control zones or states.

Breeding stock, fattening, fairs and shows:

- Zoosanitary certificate
- Straps on vehicles and isolation for twenty days at the final destination in case of having gone through control states or zones. During isolation CSF serological tests are to be performed.

If the vehicles go through a control zone before returning to the place of origin, they must be washed and disinfected using any of the disinfectants authorized by the Ministry.

b) Origin: Free or eradication zone

Destination: Control zone

Slaughter:

- Zoosanitary certificate
- Straps on vehicles

The State Delegate's Office in the state of destination should be notified in writing and by fax of the following information no more than 48 hours in advance:

- Number of animals moved
- Zoosanitary certificate number
- Name and location of the destination slaughterhouse

Notice should be given by official veterinarians from the state Delegate's Office in the state of origin or by approved veterinarians from the Classical Swine Fever Control and Eradication Campaign.

When a swine shipment arrives at a slaughter plant, whether TIF, private or municipal, all the hogs should be slaughtered within no more than 24 hours.

The state Delegate's Office in the state of destination will ask the official or approved veterinarians in the slaughter plants or, if appropriate, when so indicated by the Ministry, the managers or persons in charge of said plants, to verify that the straps on the shipment vehicles have not been removed and then to remove them. They must also examine the sanitary documentation that refers to the shipment and should save the straps that were removed and the documents.

Breeding stock, fattening, fairs and shows:

- Zoosanitary certificate.
- Straps on vehicles.
- CSF vaccination upon arrival at the destination and isolation for twenty days in cases in which vaccination is authorized in the destination zone.

The number of days in isolation after vaccination may be reduced in cases in which there is evidence that an authorized CSF swine vaccination biological agent provides immunity levels in a shorter time than indicated by this standard. In such cases the Ministry will authorize the use of said agent and the duration of isolation.

Prior to movement, the state Delegate's Office in the place of destination shall be notified in writing and by fax within no more than five days of the following:

- Number of hogs moved.
- Zoosanitary certificate number.

- Name and location of the farm of destination or of the fair or show in question.

Notice should be given by official veterinarians from the state Delegate's Office in the state of origin or by approved veterinarians from the Classical Swine Fever Control and Eradication Campaign.

Before the movement takes place the state Delegate's Office should verify, inspect and authorize, if appropriate, the premises, farms or places where fairs or shows are held and where the swine shipments will arrive. Moreover, they should report monthly by fax to the state Delegate's Office of the place of origin the list and location of the sites authorized for this purpose. The swine may only be sent to these places.

Official and/or approved veterinarians from the classical swine fever control and eradication campaign will be responsible for supervising the arrival of swine shipments and for establishing the appropriate zoosanitary measures.

c) Origin: control zone.

Destination: control zone

Slaughter, breeding stock, fattening, fairs and shows:

- Zoosanitary Certificate

- CSF vaccination certificate only when vaccination is authorized in the zone of origin.

d) Origin: eradication zone.

Destination: eradication zone.

Slaughter:

- Zoosanitary Certificate

- Straps on vehicles if they go through control zones.

Breeding stock, fattening, fairs and shows.

- Zoosanitary Certificate.

- Straps on vehicles and isolation for twenty days at the final destination in case of having gone through control zones. CSF serological tests are to be done during isolation.

e) Origin: eradication or control zone

Destination: free zone

Slaughter, breeding stock, fattening, fairs and shows:

- No movement is permitted

f) Origin: control zone.

Destination: eradication zone

Slaughter, breeding stock, fattening, fairs and shows:

- No movement is permitted

g) In the case of movements of swine from control and/or eradication zones to free or eradication zones, the Ministry will determine in special situations the requirements and procedures to be followed.

11.2 Movement of swine products and byproducts will be regulated throughout the country on the basis of the zones of origin and destination and of the requirements indicated below:

a) Origin: free, eradication or control zone

Destination: control zone.

- Zoosanitary Certificate.

- In the case of control zones that are not adjacent and where the shipment has to go through a free or eradication zone, the movement must be by air on a non-stop flight.

The above will be applicable except when the company of origin is a Federal Inspection Model Plant (TIF) and is authorized by the Directorate to market swine products and byproducts in CSF free and eradication zones, in which case the movement should take place on vehicles with straps.

b) Origin: free zone

Destination: free, eradication or control zone.

The movement of products and byproducts that originate in CSF free zones should take place without restriction except if they go through control zones to a destination in a free or eradication zone, in which case the movement should take place in vehicles with straps.

c) Origin: eradication zone

Destination: eradication zone

Movement of products that originate in eradication zones and whose destination is another eradication zone may take place without restriction unless the shipment goes through control zones, in which case there are two possibilities:

- 1) That the plant of origin is a Federal Inspection Model Plant (TIF) and is authorized by the Directorate to market swine products and byproducts in CSF free and eradication zones, in which case the movement should take place in vehicles with straps.

- 2) If the plant of origin does not comply with the above, the movement should take place by nonstop flight – including non-TIF plants.

d) Origin: eradication zone

Destination: free zone

and

Origin: Control zone.

Destination: free or eradication zone

Movement of products and byproducts that originate in eradication zones and whose destination are free zones and those that originate in control zones and whose destination are free or eradication zones should be carried out by TIF establishments that meet the following requirements:

- That they have TIF registration currently in effect.
- That they have express authorization from the Directorate to market their products and byproducts in CSF free and eradication zones.
- That transportation take place in vehicles with straps
- These companies may use raw material that originates in or comes from free eradication or control zones from TIF slaughterhouses to make their products and byproducts
- That the companies be subject to requirements regarding heat treatment procedures and the movement and identification procedures described below:

1.- Swine products or byproducts to be marketed in CSF free or eradication zones should undergo the following heat procedure:

68.9°C for thirty minutes

80.5°C for three minutes

The Ministry may authorize other time and temperature settings and other treatment techniques if and when there is scientific evidence to guarantee destruction of the CSF virus.

In the case of aged products made in control zones and to be moved to classical swine fever free and eradication zones, the following requirements should be met:

- TIF registration currently in effect.
- Express authorization from the Directorate
- The raw material used in making these products should originate in, or come from, CSF free countries or zones

- That the area where these products are made be used exclusively for that purpose and that there be no contact with other meat products.
 - That the aging process extend for longer than 140 days
 - That the fat added to these products first be treated at a 76°C temperature
- In the same way, in such cases the Ministry shall determine the procedures for transportation and movement to CSF free and eradication zones.

2.- After the heat treatment, the official or approved veterinarian should supervise the packaging and storage of the products by lots.

3.- In order to authorize the movement of swine products and byproducts to CSF free or eradication zones, the official or approved veterinarian shall issue the appropriate zoosanitary certificate making sure that the trucks or units that carry the finished product leave the plant of origin with straps duly in place.

4.- Upon arrival of swine product and byproduct shipments to the state of destination, official personnel or personnel authorized by the Ministry assigned at the checkpoints of entry to the state shall strictly follow the inspection procedure indicated below:

- Examination of the zoosanitary certificate
- Verification that the straps were not removed
- Removal of the straps and inspection of the shipment to verify that it corresponds to the information on the zoosanitary certificate.

5.- In the case of product and byproduct shipments that have to go through CSF free or eradication states in order to reach their final destination, the official personnel, or personnel authorized by the Ministry, assigned to checkpoints at the entry and exit of these states shall only examine the zoosanitary certificate that refers to the movement, and will place on the back of this document a seal and signature after examination and will check that the straps of the vehicle have not been removed, after which said vehicle may freely proceed.

6.- With the purpose of facilitating identification and inspection of finished products and byproduct lots to be moved to CSF free and eradication zones, these lots should bear an identification label with the following words:

"TIF establishment number ____: products authorized for marketing in classical swine fever free or eradication zones".

This label should be placed on the packaging and wrapping of each product and should comply with the following technical specifications:

- They should be printed.

- Their permanence on the packing or wrapping should be guaranteed to prevent detachment, disintegration, blurring or erasure due to the refrigeration and conservation temperatures at which the products are kept.
- They should be rectangular and come in three sizes, according to the needs of the product packaging:
 - a) 6 x 4 cm.
 - b) 3 x 2 cm.
 - c) 1.5 x 1 cm
- The labels should be placed on a visible place on the front of the product packaging or wrapping

11.3. The products and byproducts that are exempt from requirement for their movement to CSF free or eradication zones are:

- Sterile canned products
- Cooked, aged or canned products made in CSF zones, states or countries, if and when the original container is kept and documentation is shown of their origin and the place from where they come.

In the case of such products and byproducts the Ministry will determine the procedures for their transportation and movement within the country.

In the same way, for special cases the Ministry will determine the requirements to be met by other products and byproducts not covered by this standard.

Swine and pork products and byproducts that do not meet requirements for their movement will be held at the check points and the Ministry will determine their final destination.

11.4 Semen and Embryos.

Movement of swine semen and embryos will be regulated throughout the country on the basis of the zones of origin and destination and other requirements set forth below:

a) Origin: control zone

Destination: control zone.

- Zoosanitary Certificate.

b) Origin: control zone.

Destination: free or control zone

- No movement is permitted

c) Origin: eradication zone

Destination: eradication or control zone

- Zoosanitary Certificate

d) Origin: eradication zone

Destination: free zone

- No movement is permitted

e) Origin: free zone

Destination: free eradication and control zone

- No sanitary restrictions

11.5 The person responsible for placing the straps is the veterinarian who issues the zoosanitary certificate for the movement.

12. Classical Swine Fever Free Farm Certificates.

Farms located in control or eradication zones and that require CSF free certification must comply with the following requirements in order to receive the certificate:

- a) To be registered by the animal health authorities of the state where the farm is located
- b) The registration should include the company or farm name, location -- including municipality or place, farm area, installed capacity, production capacity, source of food and water supply, farm veterinarian, monthly production and final destination of production.
- c) Compliance with biosecurity measures determined by the Directorate and which are to be certified by means of an inspection conducted by an official veterinarian of the state in question.
- d) Working in coordination with the animal health authorities of the state in question and the Campaign approved veterinarian, serological sampling of all the breeding stock on the farm and 10% of the hogs between four and six months of age will be carried out.
- e) The blood serum samples must be thoroughly identified and should be sent to an approved diagnosis laboratory. The cost of these tests shall be paid by the owner.
- f) The procedure for obtention of CSF free farm certificates can also be applied to control zones with the same procedure set forth in this point when 100% of the animals on the farm are serologically CSF negative, in which case the only difference in treatment for movement of swine from these farms is that the vaccination certificate will not be required if the final destination is a slaughterhouse.

The free farm certificate will be issued by the Directorate based on the approved or official veterinarian's report and according to the laboratory results. This certificate will be in effect for twelve months from the date of issue.

For revalidation of a farm, an epizootiological monitoring study of serum samples must be carried out as indicated by the Directorate. The number of samples is to be determined by the Directorate.

Zones or states in an intensive controlled phase in which there are farms with CSF free certificates should have in place zoosanitary surveillance stations to make sure that movements of their swine comply with this standard.

12.1 Biosecurity Measures

The following minimum requirements must be met by SPU or farms:

- They must have a protective wall or fence surrounding the farm facilities and must restrict the entry of vehicles, persons and animals to the facilities.
- They must have an office with attached bathrooms and dressing rooms as well as a quarantine unit for replacement animals and a pit or an incinerator for disposal of dead swine. An essential requirement is the bathroom and the use of the farms' own clothes for employees. No visits are to be allowed to the Production Unit
- No birds should be allowed to enter production areas, bird netting should be placed on the building and there should be an on-going rodent control program.
- The loading and unloading areas should be outside the surrounding fence or wall.

13. Importation

13.1 Indications on the zoosanitary requirement sheet should be followed for the importation of swine intended for slaughter, breeding, fairs, shows, or research. A further requirement is 100% verification of the swine at the phytozoosanitary inspection units authorized by the Ministry.

They must originate in and come from free zones or countries recognized by the Ministry and the International Epizootic Office.

13.2 Swine for breeding, fairs, shows, or research should be isolated on farms previously authorized by the state Delegate's Office of the Ministry in the state of destination.

13.2.1 If the destination farms are located in a CSF free or eradication farm, the following requirements should be met:

- a) When the swine shipments arrive at these farms serum samples should be taken from each hog and CSF serological tests should be done.
- b) If the results of the serological tests are CSF negative the swine may be released from isolation.

- c) When the results of the serological tests in one or more hogs are CSF positive, the entire lot must be slaughtered and the sanitary measures indicated by the Ministry must be applied.

13.2.2 If the destination farms are located in a control zone, the following requirements must be met:

- a) Upon arrival of the swine shipment to the destination farm the hogs must be vaccinated for CSF if vaccination is authorized in the destination zone.
- b) The swine are to be kept in isolation for twenty days after being vaccinated, after which time they are to be released.

The isolation period may be reduced in cases in which there is evidence that a biological agent authorized for CSF vaccination provides immunity levels in less time than that specified by this standard. In such cases, the Ministry shall authorize use of the product and time of isolation.

13.3 Swine shipments intended for slaughter must comply with the following:

- a) Upon entry to the country, straps should be placed on the vehicles that carry the shipment by official Ministry personnel at the point of entry.
- b) The straps should only be removed by the official veterinarian at the TIF plant of destination.
- c) Compliance with indications on the zoosanitary requirement sheet and 100% inspection of the shipment.
- d) The head of the phytozoosanitary inspection unit should notify by telephone or fax the Ministry State Delegate's Office in the state of final destination of the number of animals shipped, the zoosanitary certificate number and the name and location of the slaughter plant of destination.

13.4 Importation of nonprocessed swine products like fresh pork, bile, viscerae, offal, hides, etc. should originate in and come from CSF free countries or from free zones recognized by the Ministry and the International Epizootic Office and must comply with the following requirements:

- a) They must come from a plant approved by the Ministry.
- b) The exporting country sanitary certificate must specify the plant of origin of the product.
- c) Movement of these products within the country must comply with the provisions set forth in point 11.2 of this Standard.

13.5 Importation of processed pork products like canned products, sausages, aged products, meal, bristles, pancreatin, etc. should originate in and come from CSF free countries or from free zones recognized by the Ministry and the International Epizootic Office, and should comply with the following requirements:

- a) The exporting country zoosanitary certificate should specify that the plant of origin of the certificate is under official supervision.

13.6 Importation of swine products or byproducts that originate in and/or come from countries affected by CSF, like sterile canned products, sterile bristles, and others, as determined by the Ministry, may only take place in special cases and if and when the product manufacturing process guarantees the elimination of the CSF virus, for which purpose the following requirements must be met:

- a) The exporting country zoosanitary certificate must specify that the plant of origin of the product is under official supervision.
- b) The product or products must have undergone a sterilization process or the equivalent, which will be specifically determined in the requirements established by the Directorate for importation of such products and indicated in the zoosanitary requirement sheet.

13.7 Importation of semen and/or embryos will only be allowed if they originate in and come from CSF countries and they must comply with the following requirements:

- a) The country of origin zoosanitary certificate must specify that the semen and/or embryo donors are CSF free

13.8 The Ministry reserves the right to check by whatever laboratory tests it deems appropriate the truthfulness of the data shown on the zoosanitary certificate.

13.9 All aspects referring to the importation of swine, swine products and by-products and semen and/or embryos not provided for in this Standard will be determined by the General Animal Health Directorate.

14. Exportation

Swine and swine products and byproducts intended for exportation must comply with the requirements indicated by the importing country.

15. Sanctions

Failure to comply with the provisions contained in this Standard will be sanctioned as provided by the Federal Animal Health Act and the Federal Metrology and Standardization Act.

16. Concordance with International Standards

The technical contents of this Standard are not equivalent to any International Standard.

17. Bibliography

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INSTRUCTIVO TECNICO DE NORMAS Y PROCEDIMIENTOS PARA LA NOTIFICACION Y ERRADICACION DE BROTES DE FIEBRE PORCINA CLASICA EN AREAS LIBRES O EN ERRADICACION. General Animal Health Directorate. S.A.R.H. Mexico City, 1991.

CODIGO ZOOSANITARIO INTERNACIONAL DE REGLAMENTACION RECOMENDADA PARA LOS INTERCAMBIOS DE ANIMALES Y PRODUCTOS. International Epizootic Office. O.I.E., Paris, France, 1986.

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18. Transitory Provisions

This Standard will go into effect the day after it is published in the **Federal Gazette**.
Effective Suffrage. No Reelection.

Mexico City, September 30, 1996; Legal Counsel, **Roberto Zavala Echavarria**. Signature.

ATTACHMENT 8

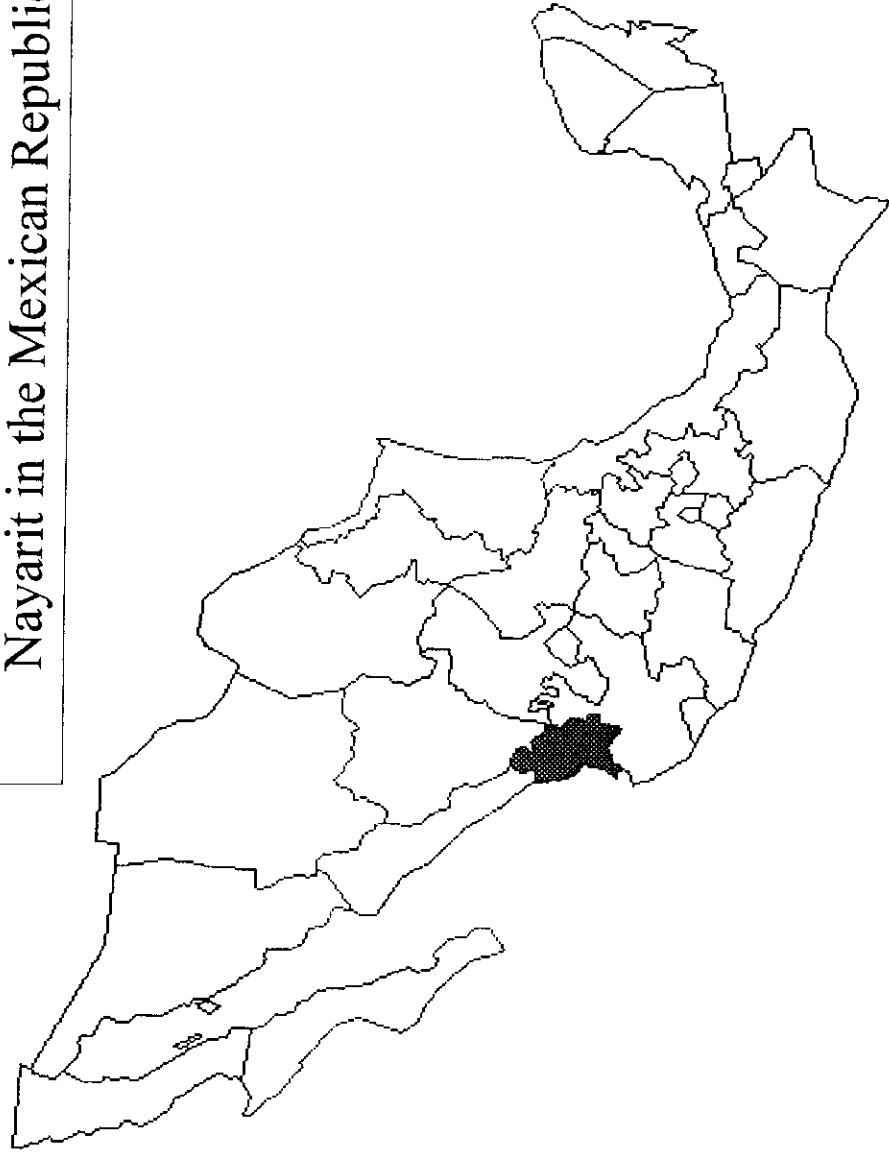


SECRETARÍA DE
AGRICULTURA, GANADERÍA,
DESARROLLO RURAL, PESCA Y ALIMENTACIÓN

ATTACHMENT 8

Geographic location of the State of Nayarit in the Mexican Republic

Nayarit

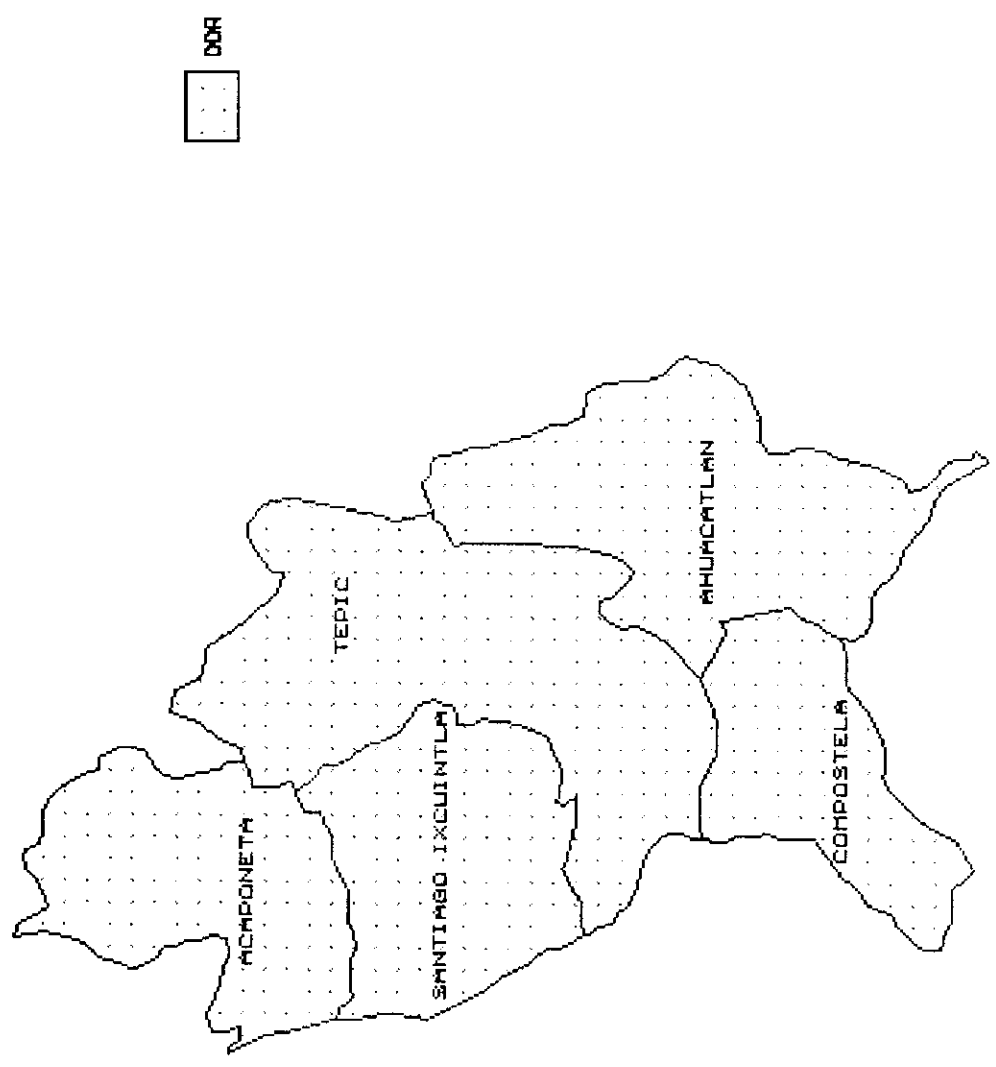


ATTACHMENT 9



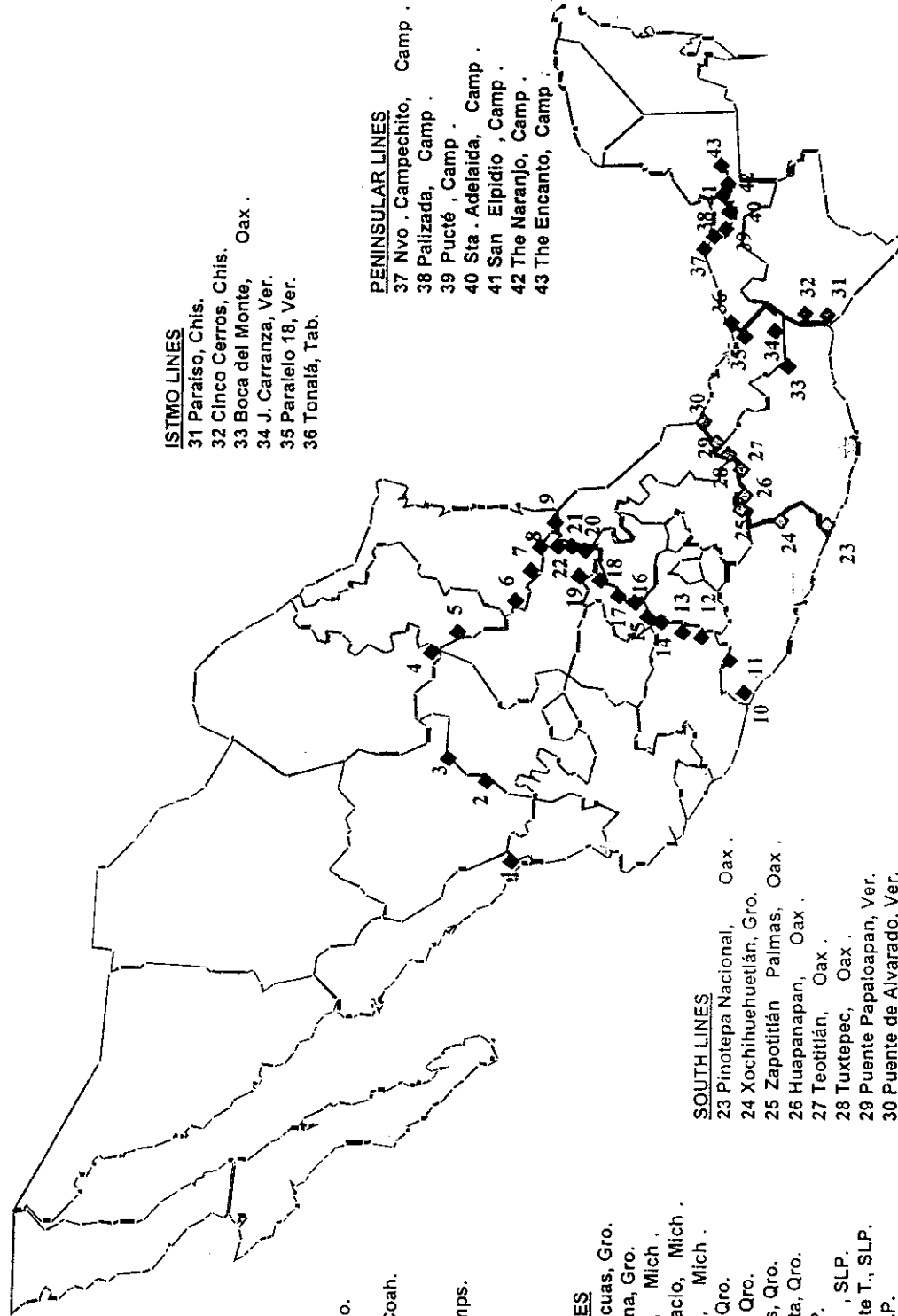
SECRETARÍA DE
AGRICULTURA, GANADERÍA,
PESCA Y ALIMENTACIÓN

Map of the Rural Development Districts (DDR) in the State of Nayarit



ATTACHMENT 10

PHYTO AND ZOOSANITARY QUARANTINE LINES



ATTACHMENT 11

Attachment 11

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED POULTRY FARMS IN THE STATE OF NAYARIT, 1999 NEWCASTLE DISEASE AND POULTRY SALMONELLOSIS

MUNICIPALITIES	TOTAL FARMS	TOTAL, TECHNOLOGICALLY MANAGED FARMS	TOTAL FARMS TO BE SAMPLED	N° OF SAMPLES PER FARM	SAMPLES PER MUNICIPALITY
TEPIC	19	1,648,856	19	59	1,121
XALISCO	0	0	0		
EL NAYAR	0	0	0		
SAN BLAS	0	0	0		
STA. MARIA DEL ORO	11	642,406	11	59	649
AHUACATLAN	2	55,000	2	59	118
JALA	0	0	0		
IXTLAN DEL RIO	0	0	0		
AMATLAN DE CAÑAS	0	0	0		
LA YESCA	0	0	0		
COMPOSTELA	1	20,500	1	59	59
BAHIA DE BANDERAS	0	0	0		
SAN PEDRO LAGUILLAS	0	0	0		
SANTIAGO IXCUINTLA	0	0	0		
TUXPAN	0	0	0		
RUIZ	0	0	0		
ROSAMORADA	0	0	0		
TECUALA	0	0	0		
ACAPONETA	0	0	0		
HUAJICORI	0	0	0		
TOTAL	33	2,366,762	33		1,947

a) In order to estimate statistical sample size for technologically-advanced operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 5% prevalence.

b) Epidemiological sampling is performed in 100% of technologically-managed farms in production.

c) Sample types can be either organ samples, or cloacal swabs.

**STATISTICAL SAMPLE SIZE FOR BACKYARD POULTRY PRODUCTION UNITS
IN THE STATE OF NAYARIT, 1999
NEWCASTLE DISEASE AND POULTRY SALMONELLOSIS**

MUNICIPALITIES	TOTAL UNITS	%	TOTAL BACKYARD POPULATION	NO. OF UNITS TO BE SAMPLED	NO. OF SAMPLES PER UNIT	SAMPLES PER MUNICIPALITY
TEPIC	228	5.7	42,000	17	5	86
XALISCO	162	4.1	9,200	12	5	61
EL NAYAR	380	9.6	6,200	29	5	143
SAN BLAS	195	4.9	19,000	15	5	73
STA. MARIA DEL ORO	185	4.7	14,500	14	5	70
AHUACATLAN	164	4.1	10,000	12	5	62
JALA	168	4.2	6,500	13	5	63
IXTLAN DEL RIO	164	4.1	13,000	12	5	62
AMATLAN DE CAÑAS	172	4.3	9,000	13	5	65
LA YESCA	212	5.3	6,000	16	5	80
COMPOSTELA	224	5.6	19,200	17	5	84
BAHIA DE BANDERAS	181	4.6	16,000	14	5	68
SAN PEDRO LAGUILLAS	153	3.8	2,000	12	5	58
SANTIAGO IXCUINTLA	220	5.5	15,000	17	5	83
TUXPAN	152	3.8	6,500	11	5	57
RUIZ	182	4.6	9,000	14	5	68
ROSAMORADA	189	4.8	13,500	14	5	71
TECUALA	187	4.7	20,000	14	5	70
ACAPONETA	217	5.5	23,000	16	5	82
HUAJICORI	242	6.1	14,300	18	5	91
TOTAL	3,977	100.0	273,900	299		1,495

- a) In order to estimate statistical sample size for technologically-advanced operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 1% prevalence.
- b) Five birds per backyard unit were sampled, or 100% in <5-bird units.
- c) Sampling is performed at random, regardless the confinement system used by the owner, either free range or total confinement.
- d) Sample type was cloacal swab.

NATIONAL COMISION FOR ANIMAL AND PLANT HEALTH
ANIMAL HEALTH GENERAL DEPARTMENT
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED POULTRY FARMS IN THE STATE OF NAYARIT, 2000.
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA**

# MUNI CIPALITIES	MUNICIPALITIES	NUMBER OF FARMS	CURRENT POPULATION	%	N° OF SAMPLES PER FARM	N° HOUSES PER FARM	MINIMUM SAMPLES TAKEN PER HOUSE	SAMPLE SIZE PER MUNICIPALITY
1	TEPIC	19	1,648,856	69.67	59	19	59	1,121
2	XALISCO	0	0	0.00	0	0	0	0
3	EL NAYAR	0	0	0.00	0	0	0	0
4	SAN BLAS	0	0	0.00	0	0	0	0
5	STA. MARIA DEL ORO	11	642,406	27.14	59	11	59	649
6	AHUACATLAN	2	55,000	2.32	59	2	59	118
7	JALA	0	0	0.00	0	0	0	0
8	IXTLAN DEL RIO	0	0	0.00	0	0	0	0
9	AMATLAN DE CAÑAS	0	0	0.00	0	0	0	0
10	LA YESCA	0	0	0.00	0	0	0	0
11	COMPOSTELA	1	20,500	0.87	59	1	59	59
12	BAHIA DE BANDERAS	3	0	0.00	0	0	0	0
13	SAN PEDRO LAGUILLAS	0	0	0.00	0	0	0	0
14	SANTIAGO IXCUINTLA	0	0	0.00	0	0	0	0
15	TUXPAN	0	0	0.00	0	0	0	0
16	RUIZ	0	0	0.00	0	0	0	0
17	ROSAMORADA	0	0	0.00	0	0	0	0
18	TECUALA	0	0	0.00	0	0	0	0
19	ACAPONETA	0	0	0.00	0	0	0	0
20	HUAJICORI	0	0	0.00	0	0	0	0
	TOTAL	33	2,366,762	33		33		1,947

a) For the statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 5% prevalence.

b) The sampling was done to the 100% of the technologically managed poultry farms in production

**STATISTICAL SAMPLE SIZE FOR BACKYARD POULTRY PRODUCTION UNITS
IN THE STATE OF NAYARIT, 2000
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA**

MUNICIPALITIES	TOTAL UNITS	%	TOTAL BACKYARD POPULATION	%	NO. OF UNITS TO BE SAMPLED	NO. OF SAMPLES PER UNIT	SAMPLES PER MUNICIPALITY
TEPIC	228	6	42,000	15.33	19	5	96
XALISCO	162	4	9,200	3.36	14	5	68
EL NAYAR	380	10	6,200	2.26	32	5	160
SAN BLAS	195	5	19,000	6.94	16	5	82
STA. MARIA DEL ORO	185	5	14,500	5.29	16	5	78
AHUACATLAN	164	4	10,000	3.65	14	5	69
JALA	168	4	6,500	2.37	14	5	71
IXTLAN DEL RIO	164	4	13,000	4.75	14	5	69
AMATLAN DE CAÑAS	172	4	9,000	3.29	14	5	72
LA YESCA	212	5	6,000	2.19	18	5	89
COMPOSTELA	224	6	19,200	7.01	19	5	94
BAHIA DE BANDERAS	181	5	16,000	5.84	15	5	70
SAN PEDRO LAGUILLAS	153	4	2,000	0.73	13	5	64
SANTIAGO IXCUINTLA	220	6	15,000	5.48	19	5	93
TUXPAN	152	4	6,500	2.37	13	5	64
RUIZ	182	5	9,000	3.29	15	5	77
ROSAMORADA	189	5	13,500	4.93	16	5	80
TECUALA	187	5	20,000	7.30	16	5	78
ACAPONETA	217	5	23,000	8.40	18	5	91
HUAJICORI	242	6	14,300	5.22	20	5	102
TOTAL	3,977	100	273,900	100.0	336		1,675

- a) In order to estimate statistical sample size for backyard poultry production units, Cannon and Roe's equation (1982) was used, considering a 97% confidence level, and a 1% prevalence.
- b) Five birds per backyard unit were sampled, or 100% in <5-bird units.
- c) Sampling is performed at random, regardless the confinement system used by the owner, either free range or total confinement.
- d) Selection of backyard units, should be representative of the geographical and bird population according to the territorial extension of each Rural Development District..

EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED POULTRY FARMS IN THE STATE OF NAYARIT, 2001.
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA**

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF HOUSES	PRODUCTION PURPOSE	N° OF % SAMPLES PER FARM	N° OF % SAMPLES PER HOUSE	TOTAL POULTRY POPULATION
COMPOSTELA	INCUBADORA CORA	PASO ATASCOSOS	4	BREEDING FLOCK	60	15	10000
STA. MARÍA DEL ORO	INCUBADORA CORA	POSTURA 1	4	BREEDING FLOCK	60	15	26500
STA. MARÍA DEL ORO	INCUBADORA CORA	POSTURA 2	4	BREEDING FLOCK	60	15	19000
STA. MARÍA DEL ORO	INCUBADORA CORA	POSTURA 3	3	BREEDING FLOCK	60	20	22000
STA. MARÍA DEL ORO	INCUBADORA CORA	POSTURA 4	5	BROILERS	60	12	24000
STA. MARÍA DEL ORO	PROD. PEC. ALPERA	ALPERA	4	BROILERS	60	15	60000
STA. MARÍA DEL ORO	PROD. PEC. ALPERA	EL ARCA	6	COMMERCIAL LAYERS	60	10	114000
STA. MARÍA DEL ORO	PROD. PEC. ALPERA	ROSALINA	13	BROILERS	156	12	300000
STA. MARÍA DEL ORO	PROD. PEC. ALPERA	EL LIMÓN	4	COMMERCIAL LAYERS	60	15	40000
STA. MARÍA DEL ORO	CAJEME PROD. PEC.	STA. CECILIA	9	COMMERCIAL LAYERS	63	7	50000
STA. MARÍA DEL ORO	CAJEME PROD. PEC.	STA. MARIA	5	COMMERCIAL LAYERS	60	12	50000
STA. MARÍA DEL ORO	CAJEME PROD. PEC.	STA MONICA	5	BROILERS	60	12	50000
AHUACATLAN	PROD. PEC. ALPERA	COPALES	8	BROILERS	64	8	150000
AHUACATLAN	PROD. PEC. ALPERA	EL CURA	5	BROILERS	60	12	60000
TECUALA	J. ANTONIO PARRA	STA ROSA	7	BROILERS	63	9	40000
TEPIC	INCUBADORA CORA	QUEVEDÉÑO	N/D	N/D	N/D	N/D	N/D
TEPIC	PROD. PEC. ALPERA	LA CONCHITA	12	BROILERS	60	5	120000
TEPIC	PROD. PEC. ALPERA	PALOMAS	4	BROILERS	64	15	92000
TEPIC	PROD. PEC. ALPERA	EL IZOTE	8	BROILERS	63	8	40000
TEPIC	PROD. PEC. ALPERA	LO DE LAMEDO	7	BROILERS	64	9	85000
TEPIC	AGROP. EL AVION	LAMEDO	8	BROILERS	60	8	100000
TEPIC	AGROP. EL AVION	GUZMANA 1	6	BROILERS	64	10	84000
TEPIC	AGROP. EL AVION	GUZMANA 2	8	BROILERS	64	8	112000
TEPIC	AGROP. EL AVION	GUZMANA 3	8	BROILERS	64	8	112000
TEPIC	AGROP. EL AVION	EL AVION	8	COMMERCIAL LAYERS	64	8	240000

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF HOUSES	PRODUCTION PURPOSE	N° OF % SAMPLES PER FARM	N° OF % SAMPLES PER HOUSE	TOTAL POULTRY POPULATION
TEPIC	AGROP. EL AVION	AGUA ZARCA 1	8	BROILERS	64	8	112000
TEPIC	AGROP. EL AVION	AGUA ZARCA 2	8	BROILERS	64	8	112000
TEPIC	AGROP. EL AVION	AGUA ZARCA 3	8	BROILERS	64	8	112000
TEPIC	AGROP. EL AVION	POLKA 1	6	BROILERS	60	10	84000
TEPIC	AGROP. EL AVION	POLKA 2	6	BROILERS	60	10	84000
TEPIC	AGROP. EL AVION	POLKA 3	6	BROILERS	60	10	84000
TEPIC	AGROP. EL AVION	POLKA 4	6	BROILERS	60	10	84000
TEPIC	AGROP. EL AVION	PALOMAS 1	8	BROILERS	64	8	112000
TEPIC	AGROP. EL AVION	PALOMAS 2	4	BROILERS	60	15	112000
TEPIC	AGROP. EL AVION	PALOMAS 3	7	BROILERS	63	9	112000
TEPIC	AGROP. EL AVION	MATRIZ	5	BROILERS	60	12	30000
TEPIC	AGROP. EL AVION	ARMADILLO	6	BROILERS	60	10	84000
TEPIC	AGROP. EL AVION	MARAVILLAS	9	BROILERS	63	7	126000
TEPIC	AGROP EL AVION	VENTARRON	6	BROILERS	60	10	84000
TEPIC	AGROP EL AVION	GUAYABO	5	COMMERCIAL LAYERS	60	12	100000
XALISCO	FERNANDO OROZCO	SAN JOSEN	3	BREEDING FLOCK	60	20	4000
TOTAL			256		2,551		3,436,500

- For the statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 5% prevalence.
 - The epidemiological sampling must be done in the total 100% of the producing farms, no matter what the purpose of production they are meant for.
 - In the even of unpopulated farms that will in the future be re-populated, they will be incorporated to the statistical sampling, obtaining at least 59 samples of the farm.
 - For Avian Salmonellosis and Newcastle disease, the sample must be of organs or cloacal or tracheal swabs. As for Avian Influenza, blood samples will be obtained with filter paper.
- (*) On those farms with more than 12 houses, to have a better statistical representation, the sample size was estimated taking a confidence level of 96% and a 2% prevalence.



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ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED POULTRY FARMS IN THE STATE OF NAYARIT, 2002.
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF HOUSES	N° OF BREEDING HENS	LAYERS	BROILERS	N° OF % SAMPLES PER HOUSE	N° OF % SAMPLES PER FARM
COMPOSTELA	INCUBADORA CORA	PASO ATASCOSOS	4	29,000			15	60
	AGROP. EL AVION	CAFECES 1	5	28,000			12	60
	AGROP. EL AVION	CAFECES 2	5	28,000			12	60
	AGROP. EL AVION	CAFECES 3	5	28,000			12	60
	AGROP. EL AVION	CAFECES 4	5	28,000			12	60
	AGROP. EL AVION	MONJA 1	5	28,000			12	60
	AGROP. EL AVION	MONJA 2	5	UNPOPULATED			12	60
STA. MARÍA DEL ORO	INCUBADORA CORA	POSTURA 1	4	26,500			15	60
	INCUBADORA CORA	POSTURA 2	4	22,000			15	60
	INCUBADORA CORA	POSTURA 3	3	23,000			20	60
	INCUBADORA CORA	POSTURA 4	5	24,000			12	60
	PROD. PEC. ALPERA	ALPERA	4			74,000	15	60
	PROD. PEC. ALPERA	EL ARCA	6			117,000	10	60
	PROD. PEC. ALPERA	ROSALINA	13		27,000		9	117
	PROD. PEC. ALPERA	EL LIMON	4			40,000	15	60
	CAJEME PROD. PEC	STA. CECILIA	9		62,000		9	63
	CAJEME PROD. PEC	STA MARIA	5		65,500		12	60
	CAJEME PROD. PEC	STA. MONICA	5		50,000		12	60
AHUACATLAN	PROD. PEC. ALPERA	COPALES	8			150,000	8	64
	PROD. PEC. ALPERA	EL CURA	5			70,000	12	60
TECUALA	J. ANTONIO PARRA	STA ROSA	7			18,000	9	63
TEPIC	INCUBADORA CORA	QUEVEDEÑO			23,000			
	PROD. PEC ALPERA	LA CONCHITA	12			120,000	5	60
	PROD. PEC ALPERA	PALOMAS	4			92,000	15	60
	PROD. PEC ALPERA	EL IZOTE	8			40,000	8	64

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF HOUSES	N° OF BREEDING HENS	LAYERS	BROILERS	N° OF % SAMPLES PER HOUSE	N° OF % SAMPLES PER FARM
	PROD. PEC ALPERA	LO DE LAMEDO	7			80,000	9	63
	PROD. PEC ALPERA	LA RESOLANA	14			140,000	9	126
	AGROP. EL AVION	LAMEDO	8			27,000	8	64
	AGROP. EL AVION	GUZMANA 1	6			84,000	10	60
	AGROP. EL AVION	GUZMANA 2	8			112,000	8	64
	AGROP. EL AVION	GUZMANA 3	8			112,000	8	64
	AGROP. EL AVION	EL AVION	8		237,000		8	64
	AGROP. EL AVION	AGUA ZARCA	8			112,000	8	64
COMPOSTELA	AGROP. EL AVION	AGUA ZARCA 2	6	29,000		112,000	8	64
	AGROP. EL AVION	AGUA ZARCA 3	8			112,000	8	64
	AGROP. EL AVION	POLKA 1	6			80,000	10	60
	AGROP. EL AVION	POLKA 2	6			25,000	10	60
	AGROP. EL AVION	POLKA 3	6			80,000	10	60
	AGROP. EL AVION	POLKA 4	6			73,000	10	60
	AGROP. EL AVION	PALOMAS 1	8			112,000	8	64
	AGROP. EL AVION	PALOMAS 2	4			112,000	15	60
	AGROP. EL AVION	PALOMAS 3	7			154,000	9	63
	AGROP. EL AVION	MATRIZ	5			30,000	12	60
	AGROP. EL AVION	ARMADILLO	6			84,000	10	60
	AGROP. EL AVION	MARAVILLAS	9			120,000	7	63
	AGROP. EL AVION	VENTARRON	6			77,000	10	60
	AGROP. EL AVION	GUAYABO	5		176,783		12	60
	AGROP. EL AVION	TRIGOMIL 1	6			87,500	10	60
	AGROP. EL AVION	TRIGOMIL 2	9			101,000	7	63
	AGROP. EL AVION	TRIGOMIL 3	6			88,000	10	60
	FERNANDO OROZCO	SAN JOSEN	3	2,500			20	60
TOTAL				267,000	641,000	2,747,588		1,854

a) For the statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria, Principios y Métodos, 1997 was used, considering a 95% confidence level, and a 5% prevalence within the flock

b) The epidemiological sampling must be done in the total 100% of the producing farms, no matter what the purpose of production they are meant for.

c) In the event of unpopulated farms that will in the future be re-populated, they will be incorporated to the statistical sampling, obtaining at least 59 samples of the farm.

d) For Avian Salmonellosis and Newcastle disease, the sample must be of organs or cloacal or tracheal swabs. As for Avian Influenza, blood samples will be obtained with filter paper.

(*) On those farms with more than 12 houses, to have a better statistical representation, the sample size was estimated taking a confidence level of 97% and a 3% prevalence.



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ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR BACKYARD POULTRY PRODUCTION UNITS
IN THE STATE OF NAYARIT, 2002.
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA**

MUNICIPALITIES	BACKYARD POULTRY	BACKYARD POULTRY PRODUCTION UNITS	%	N° OF UNITS FOR SAMPLING	SAMPLES PER UNIT	SAMPLES
R.D.D. 01						
SANTIAGO IXC	10,500	2,115	12.49	43	7	301
TUXPAN	1,500	214	1.26	4	7	28
RUIZ	4,000	450	2.66	9	7	63
ROSAMORADA	6,200	765	4.52	16	7	126
R.D.D. 02						
COMPOSTELA	8,900	1,275	7.53	26	7	182
B. BANDERAS	7,200	835	4.93	17	7	119
S. PEDRO LAG.	1,300	165	0.97	3	7	21
R.D.D. 03						
STA M DEL ORO	6,500	810	4.78	17	7	119
AHUACATLAN	5,900	660	3.90	13	7	91
JALA	3,500	500	2.95	10	7	70
IXTLAN DEL RIO	6,000	675	3.98	14	7	98
A. DE CAÑAS	5,000	564	3.33	12	7	84
LA YESCA	3,000	450	2.66	9	7	63
R.D.D. 04						
TECUALA	12,500	963	5.69	20	7	140
ACAPONETA	10,000	771	4.55	16	7	126
HUAJICORI	2,700	210	1.24	4	7	28
R.D.D. 05						
TEPIC	20,000	3,400	20.07	69	7	483
XALISCO	4,500	570	3.37	12	7	84
EL NAYAR	4,200	602	3.55	12	7	84
SAN BLAS	7,500	945	5.58	19	7	133
TOTAL	130,900	16,939	100	346		2,443

a) For the statistical sample size estimation for backyard poultry production units operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria, Principios y Métodos, 1997, was used, considering a 97% confidence level, and a 1% prevalence.

b) An average of 7 birds per backyard unit in the state of Nayarit, the 100% of all animals in each site must be sampled at the time of sampling

c) Sampling is performed at random, regardless of having animals in confinement or on free range.

d) The type of sample used must be of cloacal swabs as for Avian Influenza, blood samples will be obtained with filter paper.

(*) R.D.D. stands for Regional Development District



MINISTRY OF AGRICULTURE, LIVESTOCK, RURAL DEVELOPMENT, FISHERIES AND FOOD
ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
RISK ANALYSIS DEPARTMENT

SECRETARÍA DE AGRICULTURA, GANADERÍA, PESCA Y ALIMENTACIÓN
SEMA

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED POULTRY FARMS IN THE STATE OF NAYARIT, 2003.
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA

MUNICIPALITIES	OWNER NAME	FARM NAME	POPULATION	PRODUCTION PURPOSE	N° OF BIRDS SAMPLED PER FARM	N° OF HOUSES	N° OF BIRDS SAMPLED PER FARM
R.D.D.01							
R.D.D.02							
COMPOSTELA	INCUBADORA CORA	PASO ATASCOSO 1	28,000	BREEDING	60	4	15
COMPOSTELA	INCUBADORA CORA	PASO ATASCOSO 2	28,000	BREEDING	60	3	20
COMPOSTELA	AGROP. EL AVION	CAFECES 1	32,000	BREEDING	60	5	12
COMPOSTELA	AGROP. EL AVION	CAFECES 2	32,000	BREEDING	60	5	12
COMPOSTELA	AGROP. EL AVION	CAFECES 3	32,000	BREEDING	60	5	12
COMPOSTELA	AGROP. EL AVION	CAFECES 4	32,000	BREEDING	60	5	12
COMPOSTELA	AGROP. EL AVION	MONJA 1	32,000	BREEDING	60	5	12
COMPOSTELA	AGROP. EL AVION	MONJA 2	32,000	BREEDING	60	5	12
COMPOSTELA	AGROP. EL AVION	CRUC. LOS AYALA	20,000	BROILERS	60	6	10
R.D.D.03							
STA. MARIA DEL ORO	INCUBADORA CORA	POSTURA 1	26,000	BREEDING	60	4	15
STA. MARIA DEL ORO	INCUBADORA CORA	POSTURA 2	26,000	BREEDING	60	5	12
STA. MARIA DEL ORO	INCUBADORA CORA	POSTURA 3	26,000	BREEDING	60	4	15
STA. MARIA DEL ORO	INCUBADORA CORA	POSTURA 4	26,000	BREEDING	60	5	12
STA. MARIA DEL ORO	PROD.PEC.ALPERA	ALPERA	74,000	BROILER	60	4	15
STA. MARIA DEL ORO	PROD.PEC.ALPERA	EL ARCA	124,000	BROILER	56	8	7
STA. MARIA DEL ORO	PROD.PEC.ALPERA	ROSALINA POSTUR	126,000	HATCHER	55	11	5
STA. MARIA DEL ORO	PROD.PEC.ALPERA	ROSALINA POLLO	31,000	BROILER	60	2	30
STA. MARIA DEL ORO	PROD.PEC.ALPERA	EL LIMON	45,000	BROILER	60	5	12
STA. MARIA DEL ORO	CAJEME PROD.PEC.	STA MARIA	56,300	HATCHER	60	5	12
STA MARIA DEL ORO	CAJEME PROD.PEC	STA MONICA	68,700	HATCHER	60	5	12
AHUACATLAN	PROD.PEC.ALPERA	COPALES 1	100 000	BROILER	60	5	12
AHUACATLAN	PROD.PEC.ALPERA	COPALES 2	61,000	BROILER	60	3	20

MUNICIPALITIES	OWNER NAME	FARM NAME	POPULATION	PRODUCTION PURPOSE	N° OF BIRDS SAMPLED PER FARM	N° OF HOUSES	N° OF BIRDS SAMPLED PER FARM
AHUACATLAN	PROD.PEC.ALPERA	EL CURA	70,000	BROILER	60	6	10
AHUACATLAN	PROD.PEC.ALPERA	EL CERRO	51,000	BROILER	60	4	15
R.D.D. 04							
TECUALA	J. ANTONIO PARRA	STA RPSA	50,000	BROILER	63	9	7
R.D.D. 05							
TEPIC	INCUBADORA CORA	QUEVEDENO	20,000	HATCHER	60	4	15
TEPIC	PROD.PEC.ALPERA	LA CONCHITA	117,000	BROILER	55	11	5
TEPIC	PROD.PEC.ALPERA	PALOMAS	90,000	BROILER	60	4	15
TEPIC	PROD.PEC.ALPERA	EL IZOTE	40,000	BROILER	63	9	7
TEPIC	PROD.PEC.ALPERA	LO DE LAMEDO	85,000	BROILER	56	7	8
TEPIC	PROD.PEC.ALPERA	LA RESOLANA	150,000	BROILER	126	14	9
TEPIC	AGROP. EL AVION	LAMEDO	70,000	BROILER	56	8	7
TEPIC	AGROP. EL AVION	GUZMANA 1	193,000	BROILER	60	10	6
TEPIC	AGROP. EL AVION	GUZMANA 2	110,000	BROILER	60	12	5
TEPIC	AGROP. EL AVION	EL AVION	240,000	HATCHER	56	8	7
TEPIC	AGROP. EL AVION	AGUA ZARCA 1	165,000	BROILER	60	12	5
TEPIC	AGROP. EL AVION	AGUA ZARCA 2	165,000	BROILER	60	12	5
TEPIC	AGROP. EL AVION	POLKA 1	207,000	BROILER	60	12	5
TEPIC	AGROP. EL AVION	POLKA 2	207,000	BROILER	60	12	5
TEPIC	AGROP. EL AVION	PALOMAS 1	221,000	BROILER	60	10	6
TEPIC	AGROP. EL AVION	PALOMAS 2	152,000	BROILER	63	9	7
TEPIC	AGROP. EL AVION	MATRIZ	27,000	BROILER	60	5	12
TEPIC	AGROP. EL AVION	ARMADILLO	83,000	BROILER	60	6	10
TEPIC	AGROP. EL AVION	MARAVILLAS	124,000	BROILER	63	9	7
TEPIC	AGROP. EL AVION	VENTARRON	83,000	BROILER	60	6	10
TEPIC	AGROP. EL AVION	GUAYABO	100,000	HATCHER	60	5	12
TEPIC	AGROP. EL AVION	TRIGOMIL	276,000	BROILER	126	18	7
XALISCO	FERNANDO OROZCO	SAN JOSE	2,000	BREEDER	60	2	30
TOTAL			4,156,000		2,998	333	

a) For the statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) is referenced by: Martin-Meek-Willenberg; Epidemiologia Veterinaria, Principios y Métodos, 1997 was used, considering a 95% confidence level, and a 5% prevalence within the flock

b) The epidemiological sampling must be done in the total 100% of the producing farms, no matter what the purpose of production they are meant for.

c) In the event of unpopulated farms that will in the future be re-populated, they will be incorporated to the statistical sampling, obtaining at least 59 samples of the farm.

d) For Avian Salmonellosis and Newcastle disease, the sample must be of organs or cloacal or tracheal swabs. As for Avian Influenza, blood samples will be obtained with filter paper.

e) (*) On those farms with more than 12 houses, to have a better statistical representation, the sample size was estimated taking a confidence level of 97% and a 3% prevalence.

(*) R.D.D. stands for Regional Development District



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ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR BACKYARD POULTRY PRODUCTION UNITS
IN THE STATE OF NAYARIT, 2003.
POULTRY SALMONELLOSIS, NEWCASTLE DISEASE AND AVIAN INFLUENZA**

MUNICIPALITIES	BACKYARD POULTRY PRODUCTION UNITS	N° OF BIRDS	N° OF UNITS FOR SAMPLING	N° OF BIRDS PER UNIT	SAMPLES PER MUNICIPA LITY
R.D.D. 01					
SANTIAGO IXC	1,140	3,000	27	5	135
TUXPAN	128	900	4	5	20
RUIZ	390	1,500	10	5	50
ROSAMORADA	765	2,000	19	5	95
R.D.D. 02					
COMPOSTELA	850	2,000	21	5	105
B. BANDERAS	557	2,000	14	5	70
S. PEDRO LAG.	165	1,300	4	5	20
R.D.D. 03					
STA M DEL ORO	810	6,500	20	5	100
AHUACATLAN	660	5,900	16	5	80
JALA	500	3,500	12	5	60
IXTLAN DEL RIO	675	6,000	16	5	80
A. DE CAÑAS	564	5,000	14	5	70
LA YESCA	450	3,000	11	5	55
R.D.D. 04					
TECUALA	642	6,500	16	5	80
ACAPONETA	771	6,000	19	5	95
HUAJICORI	210	2,700	9	5	20
R.D.D. 05					
TEPIC	3,400	10,000	81	5	405
XALISCO	570	4,500		5	70
XALISCO	570		14	5	70
EL NAYAR	602	4,200	15	5	75
SAN BLAS	930	2,000	22	5	110
TOTAL	14,779	78,500	360		1,800

a) For the statistical sample size estimation for backyard poultry production units operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria, Principios y Métodos, 1997, was used, considering a 97% confidence level, and a 1% prevalence.

b) An average of 5 birds per backyard unit in the state of Nayarit, the 100% of all animals in each site must be sampled at the time of sampling

c) Sampling is performed at random, regardless of having animals in confinement or on free range.

d) The type of sample used must be of cloacal or tracheal swabs as for Avian Influenza, blood samples will be obtained with filter paper or cloacal swabs.

(*) R.D.D. stands for Regional Development District

ATTACHMENT 12

Attachment 12

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED POULTRY FARMS IN THE STATE OF NAYARIT, 1999 CLASSICAL SWINE FEVER

MUNICIPALITIES	TOTAL FARMS	TOTAL TECHNOLOGICALLY MANAGED	TOTAL FARMS TO BE SAMPLED	N° OF SAMPLES PER FARM	SAMPLES PER MUNICIPALITY
TEPIC	7	2,392	7	59	413
XALISCO	0	0	0		
EL NAYAR	0	0	0		
SAN BLAS	3	2,178	3	59	177
STA. MARIA DEL ORO	5	2,945	5	59	295
AHUACATLAN	4	1,364	4	59	236
JALA	0	0	0		
IXTLAN DEL RIO	2	851	2	59	118
AMATLAN DE CAÑAS	3	318	3	59	177
LA YESCA	0	0	0		
COMPOSTELA	3	225	3	59	177
BAHIA DE BANDERAS	3	302	3	59	177
SAN PEDRO LAGUILLAS	0	0	0		
SANTIAGO IXCUINTLA	0	0	0		
TUXPAN	1	170	1	59	59
RUIZ	0	0	0		
ROSAMORADA	1	56	1	59	59
TECUALA	0	0	0		
ACAPONETA	0	0	0		
HUAJICORI	1	8	1	59	59
TOTAL	33	10,809	33		1,947

- a) For the statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 5% prevalence.
- b) In farrow-to-finish farms, 80% of samples corresponded to sows, 10% to boars, and 10% to pigs older than 4 months of age.
- c) In the case of growth-finish farms, all samples were obtained from >4-month-old pigs.

**STATISTICAL SAMPLE SIZE FOR BACKYARD SWINE PRODUCTION UNITS IN
THE STATE OF NAYARIT, 1999
CLASSICAL SWINE FEVER**

MUNICIPALITIES	TOTAL UNITS	%	TOTAL BACKYARD POPULATION	NO. OF UNITS TO BE SAMPLED	NO. OF SAMPLES PER UNIT	SAMPLES PER MUNICIPALITY
TEPIC	228	5.7	2,151	17	5	86
XALISCO	162	4.1	1,571	12	5	61
EL NAYAR	380	9.6	383	29	5	143
SAN BLAS	195	4.9	769	15	5	73
STA. MARIA DEL ORO	185	4.7	1,497	14	5	70
AHUACATLAN	164	4.1	1,498	12	5	62
JALA	168	4.2	1,497	13	5	63
IXTLAN DEL RIO	164	4.1	2,995	12	5	62
AMATLAN DE CAÑAS	172	4.3	2,996	13	5	65
LA YESCA	212	5.3	1,136	16	5	80
COMPOSTELA	224	5.6	1,497	17	5	84
BAHIA DE BANDERAS	181	4.6	1,497	14	5	68
SAN PEDRO LAGUILLAS	153	3.8	1,497	12	5	58
SANTIAGO IXCUINTLA	220	5.5	1,714	17	5	83
TUXPAN	152	3.8	1,288	11	5	57
RUIZ	182	4.6	1,293	14	5	68
ROSAMORADA	189	4.8	1,371	14	5	71
TECUALA	187	4.7	1,291	14	5	70
ACAPONETA	217	5.5	1,334	16	5	82
HUAJICORI	242	6.1	731	18	5	91
TOTAL	3,977	100.0	30,006	299		1,495

- a) For the statistical sample size estimation for backyard operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 1% prevalence.
- b) Five pigs per backyard unit were sampled, or a 100% of the animals in less than 5 animal operations.
- c) Sampling was performed at random, regardless of having animals in confinement or on free range.

NATIONAL COMISION FOR ANIMAL AND PLANT HEALTH
ANIMAL HEALTH GENERAL DEPARTMENT
RISK ANALYSIS UNIT

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED SWINE FARMS IN THE STATE OF NAYARIT, 2000.
CLASSICAL SWINE FEVER

# MUNI CIPALI TIES	MUNICIPALITIES	NUMBER OF FARMS	CURRENT SWINE POPULATION	%	N° OF FARMS FOR SAMPLING	N° SAMPLES PER FARM	N° OF BOOTHS	N° SAMPLES TAKEN PER BOOTH	SAMPLE SIZE PER MUNICIPALITY
1	TEPIC	7	2,392	22.13	7	59	7	59	413
2	XALISCO	0	0	0.00	0	0	0	0	0
3	EL NAYAR	0	0	0.00	0	0	0	0	0
4	SAN BLAS	3	2,178	20.15	3	59	3	59	177
5	STA. MARIA DEL ORO	5	2,945	27.25	5	59	5	59	295
6	AHUACATLAN	4	1,364	12.62	4	58	4	58	232
7	JALA	0	0	0.00	0	0	0	0	0
8	IXTLAN DEL RIO	2	851	7.87	2	57	2	57	114
9	AMATLAN DE CAÑAS	3	318	2.94	03	54	03	54	162
10	LA YESCA	0	0	0.00	0	0	0	0	0
11	COMPOSTELA	3	225	2.08	3	52	3	52	156
12	BAHIA DE BANDERAS	3	302	2.79	3	54	3	54	162
13	SAN PEDRO LAGUILLAS	0	0	0.00	0	0	0	0	0
14	SANTIAGO IXCUINTLA	0	0	0.00	0	0	0	0	0
15	TUXPAN	1	170	1.57	1	50	1	50	50
16	RUIZ	0	0	0.00	0	0	0	0	0
17	ROSAMORADA	1	56	0.52	1	37	1	37	37
18	TECUALA	0	0	0.00	0	0	0	0	0
19	ACAPONETA	0	0	0.00	0	0	0	0	0
20	HUAJICORI	1	8	0.07	1	8	1	8	8
	TOTAL	33	10,809	100	33		33		1,806

- a) For the statistical sample size estimation for technologically-managed operations, Cannon and Roe's equation (1982) was used, considering a 95% confidence level, and a 5% prevalence.
- b) 80% of the samples must belong to breeding sows, 10% to boars and 10% to fattening pigs older than 4 months of age
- c) For fattening farms, the sample total will be obtained from pigs older than 4 months
- (*) The samples can be used for epidemiological surveillance of aujeszky's disease

NATIONAL COMISION FOR ANIMAL AND PLANT HEALTH
ANIMAL HEALTH GENERAL DEPARTMENT
RISK ANALYSIS UNIT

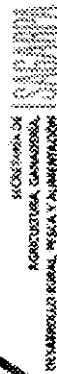
**STATISTICAL SAMPLE SIZE FOR BACKYARD SWINE PRODUCTION UNITS IN THE STATE OF NAYARIT, 2000.
CLASSICAL SWINE FEVER**

MUNICIPALITIES	POPULATION OF BACKYARD SWINE	%	N° OF SITES	%	N° OF SITES SAMPLED	ESTIMATED N° OF % SAMPLES PER SITE	SAMPLE SIZE PER MUNICIPALITY
TEPIC	2,151	7.17	228	5.73	19	5	96
XALISCO	1,571	5.24	162	4.07	14	5	68
EL NAYAR	383	1.28	380	9.55	32	5	160
SAN BLAS	769	2.56	195	4.90	16	5	82
STA. MARIA DEL ORO	1,497	4.99	185	4.65	16	5	78
AHUACATLAN	1,498	4.99	164	4.12	14	5	69
JALA	1,497	4.99	168	4.22	14	5	71
IXTLAN DEL RIO	2,995	9.98	164	4.12	14	5	69
AMATLAN DE CAÑAS	2,996	9.98	172	4.32	14	5	72
LA YESCA	1,136	3.79	212	5.33	18	5	89
COMPOSTELA	1,497	4.99	224	5.63	19	5	94
BAHIA DE BANDERAS	1,497	4.99	181	4.55	15	5	76
SAN PEDRO LAGUILLAS	1,497	4.99	153	3.85	13	5	84
SANTIAGO IXCUINTLA	1,714	5.71	220	5.53	19	5	93
TUXPAN	1,288	4.29	152	3.82	13	5	64
RUIZ	1,293	4.31	182	4.58	15	5	77
ROSAMORADA	1,371	4.57	189	4.75	16	5	80
TECUALA	1,291	4.30	187	4.70	16	5	79
ACAPONETA	1,334	4.45	217	5.46	18	5	91
HUAJICORI	731	2.44	242	6.08	20	5	102
TOTAL	30,006	100	3,977	100	335		1,675

- a) For the statistical sample size estimation for backyard swine producing operations, Cannon and Roe's equation (1982) was used, considering a 97% confidence level, and a 1% prevalence.
- b) An average of 5 pigs was considered per unit of backyard operation in the State of Nayarit, the 100% of pigs had to be sampled in each site.
- c) Samples were taken randomly, independently of the fact that some were confined and others were free ranged.
- d) The selection of backyard sites, must be representative of the geographic and porcine population according to the territorial extension of each Rural Development district
- (*) These samples can be used for the epidemiological surveillance of Aujeszky's Disease

(*) The statistical sample size, can be used for the epidemiological surveillance of Aujeszky's disease

ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT



STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED SWINE FARMS IN THE STATE OF NAYARIT, 2001
CLASSICAL SWINE FEVER AND AUJESKY'S DISEASE

MUNICIPALITIES	OWNER NAME	FARM NAME	LOCATION	TOTAL POPULATION	TOTAL SAMPLES PER FARM
SANTIAGO	MUJERES DE YAGO	PORCICOLA YAGO	ORILLAS DEL PUEBLO	123	47
TUXPAN	TEODORA VERGARA	SAN ANTONIO	KM 3 TUXPAN-PEÑAS	525	56
ROSAMORADA	CBTA 72	CBTA 72	KM 78 CARR TEPIC-MAZATLAN	90	44
COMPOSTELA	OPTACIN FREGOSO	CANOAS	500MTS CARR A MIRAVALLS	123	47
COMPOSTELA	RENE RODRIGUEZ	CANOAS 1	COLONIA EL GARABATO	132	48
COMPOSTELA	FRAN BARRAGAN	LA CIENEGA	KM 4 CARR AL BOROLLON	64	39
COMPOSTELA	ALVARO TELLO	EL EMBARCADERO	EL EMBARCADERO	57	37
COMPOSTELA	MARISOL AGUILAR	MILPILLAS	MILPILLAS	136	48
COMPOSTELA	ESC.MED.VET	LAS BEATAS	KM 3.5 CARR COMPOSTELA-CHAPALILLA	424	56
COMPOSTELA	FAMILIA MONRROY	HNOS MONROY	CARR VIEJA A SAN PEDRO LAG	187	51
COMPOSTELA	J.LUIS ORTIZ	SAN JOSE	PREDIO SAN ANTONIO	164	50
COMPOSTELA	AURELIO RGUEZ	LOS MANGUITOS	KM 3 CARR. COMPOSTELA-VALLARTA	363	55
COMPOSTELA	SALVADOR AGUILAR	CEBORUCO	EL CUASTECOMATE	68	40
B. DE BANDERAS	ARTURO HDEZ	TESCALAME	SAN VICENTE	393	55
B. DE BANDERAS	LUIS MORENO	LOS MORENO	SAN VICENTE	46	34
AHUACATLAN	FELICIANO BECERRA	UZETA	UZETA	262	53
AHUACATLAN	COOP. TETITLAN	COOP TETITLAN	TETITLAN	366	55
AHUACATLAN	PROD.PEC.ALPERA	EL CURA	TETITLAN	526	56
AHUACATLAN	PROD.PEC.ALPERA	COPALES	COPALES	3191	59
AHUACATLAN	PROD.PEC.ALPERA	CENTRO PORCINO	KM 152 CARR. TEPIC GUAD	951	58
AHUACATLAN	JAIME BAÑUELOS	EL LLANO	AHUACATLAN	252	53
IXTLAN	J. ARTURO GLEZ	SAN ISIDRO	PREDIO LAS HIGUERAS	2305	59
IXTLAN	GUILLERMO HDEZ	SANTA CECILIA	KM 5 CARR. IXTLAN GUADALAJARA	1176	58



SECRETARÍA DE
AGRICULTURA, GANADERÍA,
PESCA Y ALIMENTACIÓN

ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED SWINE FARMS IN THE STATE OF NAYARIT, 2001
CLASSICAL SWINE FEVER AND AUJESKY'S DISEASE

MUNICIPALITIES	OWNER NAME	FARM NAME	LOCATION	TOTAL POPULATION	TOTAL SAMPLES PER FARM
SANTIAGO	MUJERES DE YAGO	PORCICOLA YAGO	ORILLAS DEL PUEBLO	123	47
TUXPAN	TEODORA VERGARA	SAN ANTONIO	KM 3 TUXPAN-PENAS	525	56
ROSAMORADA	CBTA 72	CBTA 72	KM 78 CARR TEPIC-MAZATLAN	90	44
COMPOSTELA	OPTACIN FREGOSO	CANOAS	500MTS CARR A MIRAVALLS	123	47
COMPOSTELA	RENE RODRIGUEZ	CANOAS 1	COLONIA EL GARABATO	132	48
COMPOSTELA	FRAN BARRAGAN	LA CIENEGA	KM 4 CARR AL BORBOLLON	64	39
COMPOSTELA	ALVARO TELLO	EL EMBARCADERO	EL EMBARCADERO	57	37
COMPOSTELA	MARISOL AGUILAR	MILPILLAS	MILPILLAS	136	48
COMPOSTELA	ESC.MED.VET	LAS BEATAS	KM 3.5 CARR COMPOSTELA-CHAPALILLA	424	56
COMPOSTELA	FAMILIA MONROY	HNOS MONROY	CARR VIEJA A SAN PEDRO LAG	187	51
COMPOSTELA	J.LUIS ORTIZ	SAN JOSE	PREDIO SAN ANTONIO	164	50
COMPOSTELA	AURELIO RGUEZ	LOS MANGUITOS	KM 3 CARR. COMPOSTELA-VALLARTA	363	55
COMPOSTELA	SALVADOR AGUILAR	CEBORUCO	EL CUASTECOMATE	68	40
B. DE BANDERAS	ARTURO HDEZ	TESCALAME	SAN VICENTE	393	55
B. DE BANDERAS	LUIS MORENO	LOS MORENO	SAN VICENTE	46	34
AHUACATLAN	FELICIANO BECERRA	UZETA	UZETA	262	53
AHUACATLAN	COOP. TETITLAN	COOP TETITLAN	TETITLAN	366	55
AHUACATLAN	PROD.PEC.ALPERA	EL CURA	TETITLAN	526	56
AHUACATLAN	PROD.PEC.ALPERA	COPALES	COPALES	3191	59
AHUACATLAN	PROD.PEC.ALPERA	CENTRO PORCINO	KM 152 CARR. TEPIC GUAD	951	58
AHUACATLAN	JAIME BAÑUELOS	EL LLANO	AHUACATLAN	252	53
IXTLAN	J. ARTURO GLEZ	SAN ISIDRO	PREDIO LAS HIGUERAS	2305	59
IXTLAN	GUILLERMO HDEZ	SANTA CECILIA	KM 5 CARR. IXTLAN GUADALAJARA	1176	58
A DE CAÑAS	JESUS AGUILAR	LOS LAURELES 2	BARRANCA DEL ORO	166	50

MUNICIPALITIES	OWNER NAME	FARM NAME	LOCATION	TOTAL POPULATION	TOTAL SAMPLES PER FARM
A DE CAÑAS	SOC 8 PERSONAS	LOS LAURELES	BARRANCA DEL ORO	645	57
A DE CAÑAS	EDUARDO PINEDO	HUMEDA VERDE	AMATLAN DE CAÑAS	162	50
STA M DEL ORO	PROD.PEC.ALPERA	EL ARCA	ZAPOTANITO	1304	58
STA M DEL ORO	PROD.PEC.ALPERA	ALPERA	ZAPOTANITO	4617	59
STA M DEL ORO	PROD.PEC.ALPERA	GIGANTES	ZAPOTANITO	1540	58
STA M DEL ORO	AGROP GAVILAN	EL GAVILAN	CAMINO A CERRO BLANCO	1340	58
STA M DEL ORO	BEATRIZ CARRILLO	LA QUERENCIA	KM 7 CARR A LA LAGUNA	251	53
ACAPONETA	ANTONIO HDEZ	EL NARANJITO	KM 1 CARR TECUALA-NOVILLERO	233	53
TECUALA	PEDRO ESPINOZA	EMILIANO	KM 3 CARR TECUALA	202	52
TEPIC	FERNANDO FIERROS	EL REFUGIO	KM 1.5 CAMINON VIEJO PANTANAL	202	59
TEPIC	PROD.PEC.ALPERA	LA CONCHITA	EL AGUACATE	3412	59
TEPIC	CARLOS FIERROS	SAN JORGE	KM 1.5 CAMINO VIEJO PANTANAL	719	57
TEPIC	PETRA GONZALEZ	PORCICOLA 3 HNOS	KM 2 CAMINO VIEJO A PANTANAL	402	55
TEPIC	CANDELARIO RUBIO	SAN ISIDRO	KM 1 CAMINO VIEJO A PANTANAL	172	50
TEPIC	GUADALUPE AGUILAR	GUADALUPE	KM 2 CAMINO VIEJO A PANTANAL	76	42
TEPIC	RAFAEL NUNGARAY	LOS LIMONES	EL IZOTE	50	35
TEPIC	RAUDEL FRAUSTO	EL GUINEO	KM 1 + 600 CAMINO A PANTANAL	35	29
TEPIC	PROD.PEC.ALPERA	EL IZOTE	EL IZOTE	1728	58
SAN BLAS	MANUEL HERNANDEZ	SAN JUAN	JALCOCOTAN	4065	59
SAN BLAS	LUIS M ARIAS	LA BAJADA	LA BAJADA	219	52
SAN BLAS	ELIDA ARREDONDO	PORCICOLA COSTENA	PIMIENTILLO	41	32
TOTAL				36,799	2,293

a) For statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg; Epidemiologia Veterinaria, Principios y Métodos, 1997 was used, considering a 95% confidence level, and a 5% prevalence.

b) The epidemiological sampling must be obtained from the total 100% of the producing farms, regardless of its production purpose.

c) In the event of unpopulated farms that are restocked, they should be incorporated to the statistical sampling, obtaining at least 59 samples of the farm.

d) For swine commercial farms of complete production cycles, 80% of the samples must belong to breeding sows, 10% to adult boars and 10% for fattening pigs older than 4 months of age. As for commercial swine farms for meat production, all samples must belong to pigs older than 4 months of age.

e) The sample type for epidemiological surveillance is blood serum.



SECRETARÍA DE
AGRICULTURA, GANADERÍA,
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ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

STATISTICAL SAMPLE SIZE FOR BACKYARD SWINE PRODUCTION UNITS IN THE STATE OF NAYARIT, 2001
CLASSICAL SWINE FEVER

MUNICIPALITIES	NUMBER OF SITES	%	BACKYARD POULTRY PRODUCING OPERATION POPULATION	N° OF SITES SAMPLED	ESTIMATED N° OF % SAMPLES PER SITE	SAMPLE SIZE PER MUNICIPALITY
TEPIC	228	5.73	2,151	19	5	95
XALISCO	162	4.07	1,571	14	5	70
EL NAYAR	380	9.55	383	32	5	160
SAN BLAS	195	4.90	769	16	5	80
STA. MARIA DEL ORO	185	4.65	1,480	16	5	80
AHUACATLAN	164	4.12	1,498	14	5	70
JALA	168	4.22	1,497	14	5	70
IXTLAN DEL RIO	164	4.12	2,995	14	5	70
AMATLAN DE CAÑAS	172	4.32	2,996	14	5	70
LA YESCA	212	5.33	1,136	18	5	90
COMPOSTELA	224	5.63	1,400	19	5	95
BAHIA DE BANDERAS	181	4.55	1,381	15	5	75
SAN PEDRO LAGUILLAS	153	3.85	1,308	13	5	65
SANTIAGO IXCUINTLA	220	5.53	1,714	19	5	95
TUXPAN	152	3.82	1,288	13	5	65
RUIZ	182	4.58	1,293	15	5	75
ROSAMORADA	189	4.75	1,371	16	5	80
TECUALA	187	4.70	1,291	16	5	80
ACAPONETA	217	5.46	1,334	18	5	80
HUAJICORI	242	6.08	731	20	5	100
TOTAL	3,977	100	29,587	335		1,665

a) For the statistical sample size estimation for technologically advanced operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg:

Epidemiologia Veterinaria, Principios y Métodos, 1997 was used, considering a 97% confidence level, and a 1% prevalence.

b) An average of 5 pigs was considered per unit of backyard operation in the State of Nayarit, the 100% of pigs had to be sampled in each site.

c) Samples were taken randomly, independently of the fact that some were confined and others were free ranged.

d) The type of sample must be of blood serum

(*) The statistical sample size, can be used for the epidemiological surveillance of Aujeszky's disease



SECRETARÍA DE
AGRICULTURA, GANADERÍA,
DESARROLLO RURAL, PESCA Y ALIMENTACIÓN

SAGARPA

ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED SWINE
FARMS IN THE STATE OF NAYARIT, 2002
CLASSICAL SWINE FEVER AND AUJESKY'S DISEASE**

MUNICIPALITIES	OWNER NAME	FARM NAME	Nº OF HOUSES	TOTAL SWINE POPULATION	SAMPLES PER HOUSE	TOTAL SAMPLES PER FARM
TUXPAN	TEODORA VERGARA	SAN ANTONIO	2	525	28	56
ROSAMORADA	CBTA 72	CBTA 72	1	90	44	44
COMPOSTELA	OPTACIN FREGOSO	CANOAS	2	123	29	48
	RENE RODRIGUEZ	CANOAS 1	2	132	29	48
	FRAN BARRAGAN	LA CIENEGA	1	64	39	39
	ALVARO TELLO	EL EMBARCADERO	1	121	47	47
	MARISOL AGUILAR	MILPILLAS	2	136	24	48
	ESC.MED.VET	LAS BEATAS	2	216	26	52
	FAMILIA MONRROY	HNOS MONROY	2	207	26	52
	J.LUIS ORTIZ	SAN JOSE	2	138	25	50
	AURELIO RGUEZ	LOS MANGUITOS	2	348	28	56
	SALVADOR AGUILAR	CEBORUCO	1	46	34	34
	ANTONIO MENCHACA	LOMA LATA	2	167	25	50
	GRABIEL A.ROMERO	LOS GAVILANES	1	83	43	43
B. DE BANDERAS	ARTURO HDEZ	TESCALAME	3	298	20	60
	LUIS MORENO	LOS MORENO	1	41	32	32
	MARIO A. SANCHEZ	LA ESPERANZA	3	450	20	60
	LINO NAVA VALDEZ	CATORCE PALMAS	1	69	23	23
	PORCICOLA NAY.	S.P.R. DEL R.L.	2	217	26	52
AHUACATLAN	FELICIANO BECERRA	UZETA	2	88	22	44
	COOP. TETITLAN	COOP TETITLAN	3	178	18	54
	PROD.PEC.ALPERA	EL CURA	1	584	27	57
	PROD.PEC.ALPERA	COPALES	1	3544	59	59
	PROD.PEC.ALPERA	CENTRO PORCINO	2	698	24	58
	JAIME BAÑUELOS	EL LLANO	2	252	22	54
IXTLAN	J. ARTURO GLEZ	SAN ISISDRO	2	2186	30	60
	GUILLERMO HDEZ	SANTA CECILIA	2	1003	24	58
A DE CAÑAS	JESUS AGUILAR	LOS LAURELES 2	2	91	22	44
	SOC 8 PERSONAS	LOS LAURELES	3	785	20	60
STA M DEL ORO	PROD.PEC.ALPERA	EL ARCA	6	1382	10	60
	PROD.PEC.ALPERA	ALPERA	5	3708	12	60
	PROD.PEC.ALPERA	GIGANTES	4	1562	15	60
	AGROP GAVILAN	EL GAVILAN	4	1330	15	60
	BEATRIZ CARRILLO	LA QUERENCIA	3	781	20	60

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF HOUSES	TOTAL SWINE POPULATION	SAMPLES PER HOUSE	TOTAL SAMPLES PER FARM
TEPIC	FERNANDO FIERROS	EL REFUGIO	5	2112	12	60
	PROD.PEC.ALPERA	LA CONCHITA	5	2829	12	60
	CARLOS FIERROS	SAN JORGE	4	719	15	60
	PETRA GONZALEZ	PORCICOLA 3 HNOS	3	267	19	57
	CANDELARIO RUBIO	SAN ISIDRO	2	172	25	50
	GUADALUPE AGUILAR	GUADALUPE	2	76	21	42
	NICOLAS PADILLA M	EL JALICIENCE	1	61	39	39
	PROD.PEC.ALPERA	EL IZOTE	4	1855	15	60
SAN BLAS	ANTONIO RODARTE	MATACHEN	2	81	22	44
	MANUEL HERNANDEZ	SAN JUAN	5	4065	12	60
	LUIS M ARIAS	LA BAJADA	3	219	18	54
TOTAL			111	34,279		2,328

- For statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982)., Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria, Principios y Métodos, 1997 was used, considering a 95% confidence level, and a 5% prevalence.
- The epidemiological sampling must be obtained from the total 100% of the producing farms, regardless of its production purpose.
- In the event of unpopulated farms that are restocked, they should be incorporated to the statistical sampling, obtaining at least 59 samples of the farm.
- The sample type for epidemiological surveillance is blood serum.



SECRETARÍA DE
AGRICULTURA, GANADERÍA,
DESARROLLO RURAL, PESCA Y ALIMENTACIÓN

ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR BACKYARD SWINE PRODUCTION UNITS IN
THE STATE OF NAYARIT, 2002.
CLASSICAL SWINE FEVER AND AUJESKY'S DISEASE**

MUNICIPALITIES	POPULATION OF BACKYARD SWINE	Nº OF UNITS	%	Nº OF UNITS SAMPLED	ESTIMATED Nº OF % SAMPLES PER UNIT	SAMPLE SIZE PER MUNICIPAL ITY
SANTIAGO	1,542	1410	10.78	37	3	111
TUXPAN	856	214	1.64	6	3	18
ROSAMORADA	1524	765	5.85	20	3	60
RUIZ	900	450	3.44	12	3	36
COMPOSTELA	1,700	850	6.50	22	3	66
B. DE BANDERAS	1,671	557	4.26	15	3	45
S. PEDRO LAG.	660	165	1.26	4	3	12
AHUACATLAN	990	330	2.52	9	3	27
IXTLAN	1,620	540	4.13	14	3	42
A. DE CAÑAS	1,504	376	2.87	10	3	30
JALA	945	315	2.41	8	3	24
LA YESCA	1,200	300	2.29	8	3	24
STA M. DEL ORO	1,245	405	3.10	11	3	33
ACAPONETA	1,542	771	5.89	20	3	60
TECUALA	1,540	770	5.89	20	3	60
HUAJICORI	630	210	1.61	6	3	18
TEPIC	6,800	3,400	26.00	90	3	270
SAN BLAS	1,260	630	4.82	17	3	51
XALISCO	760	380	2.91	10	3	30
EL NAYAR	723	241	1.84	6	3	18
TOTAL	30,890	13,079	100.00	345		1,035

- e) For the statistical sample size estimation for backyard swine producing operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria, Principios y Métodos, 1997 was used, Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria, Principios y Métodos, 1997 considering a 95% confidence level, and a 5% prevalence.
- a) An average of 3 pigs was considered per unit of backyard operation in the State of Nayarit, the 100% of pigs s had to be sampled in each unit.
- b) Samples were taken randomly, independently of the fact that some were confined and others were free ranged.
- c) The type of sample must correspond to blood serum.



THE MINISTRY OF AGRICULTURE, LIVESTOCK, RURAL DEVELOPMENT, FISHERIES AND FOOD
ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DEPARTMENT
RISK ANALYSIS UNIT DEPARTMENT

STATISTICAL SAMPLE SIZE FOR TECHNOLOGICALLY MANAGED SWINE FARMS IN THE STATE OF NAYARIT, 2003
CLASSICAL SWINE FEVER AND AUJESKY'S DISEASE

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF BOOTH	BOARS	BREEDING SOWS	LACTATING GLTS	WEANED PIGS	DEVELOPM. EXT PIGS	GROWTH PIGS	FATTENING PIGS	FINALIZATI. ON PIGS	POPUL. LATION	N° OF PIGS SAMPLED PER FARM	N° OF PIGS SAMPLED PER BOOTH
R.O.D.01														
TUXPAN	TEODORA VERGARA	SAN ANTONIO	2	5	70	80	80	120	100	50	20	527	56	28
ROSAMORADA	CBTA 72	CBTA 72	1	2	18	12	12	12	12	12	10	91	44	44
R.O.D.02														
COMPOSTELA	OPTACIN FREGOSO	CANOAS	2	2	19	12	20	20	20	20	10	125	48	24
COMPOSTELA	RENE RODRIGUEZ	CANOAS 1	2	2	20	20	20	25	25	20	20	134	48	24
COMPOSTELA	FRAN BARRAGAN	LA CIENEGA	1	2	10	20	20	8	4			60	39	39
COMPOSTELA	ALVARO TELLO	EL EMBARCADERO	1	2	18	26	25	25	25			122	47	47
COMPOSTELA	MARISOL AGUILAR	MILPILLAS	2	2	24	15	12	25	25	25	8	138	50	25
COMPOSTELA	ESC MED VET	LAS BEATAS	2	3	45	44	44	40	15	15	10	218	52	26
COMPOSTELA	FAMILIA MONROY	HNOS MONROY	2	2	45	40	40	20	20	20	20	209	52	26
COMPOSTELA	J. LUIS ORTIZ	SAN JOSE	2	2	20	30	28	28	10	10	10	140	50	25
COMPOSTELA	AURELIO RUEZ	LOS MANGUITOS	2	3	55	50	50	50	50	50	40	350	56	28
COMPOSTELA	SALVADOR AGUILAR	CEBORUCO	1	1	7	10	10	10	8			47	34	34
COMPOSTELA	ANTONIO MENCHACA	LOMA LATA	2	2	25	30	30	30	20	20	10	169	50	25
COMPOSTELA	GABRIEL A ROMERO	LOS GAVILANES	1	1	10	10	10	10	10	10	10	76	42	42
B. DE BANDERAS	MARIO A SANCHEZ	LA ESPERANZA	3				100	80	80	80		343	54	18
B. DE BANDERAS	LINO NAVA VALEZ	L14 PALMAS	1	2	20	11	16	10	10			70	41	41
B. DE BANDERAS	PORCICOLA NAY	S.P.R. DEL R.L.	2	2	35	40	40	30	30	20	20	219	52	26
R.O.D.03														
AHUACATLAN	FELICIANO BECERRA	UZETA	2	1	27	30	30					90	44	22
AHUACATLAN	COOP. TETITLAN	COOP. TETITLAN	3	4	45	35	40	20	13	15	6	181	51	17
AHUACATLAN	PROD. PEC ALPERA	EL CURA	1	2				384			218	585	57	57
AHUACATLAN	PROD. PEC ALPERA	COPALES	1					944	1,550	630	420	3,545	59	59
AHUACATLAN	PROD. PEC ALPERA	CENTRO PORCINO	2	12	176	200	310					700	58	29
AHUACATLAN	JAIME BANUELOS	EL LLANO	2	2	30	30	30	25	25	25	20	189	52	26
IXTLAN	J. ARTURO GLEZ	SAN ISIDRO	2	6	250	350	340	320	320	300	300	2,188	60	30
IXTLAN	GUILLERMO HDEZ	SANTA CECILIA	2	3	120	150	140	150	150	150	150	1,005	58	29
A. DE CANAS	JESUS AGUILAR	LOS LAURELES 2	2	1	10	15	15	15	15	12	8	93	44	22
A. DE CANAS	SOC. 8 PERSONAS	LOS LAURELES	3	7	85	130	120	120	120	120	80	785	57	19
STAM. DEL ORO	PROD. PEC ALPERA	EL ARCA	6				75	415	415	236	235	1,382	60	10
STAM. DEL ORO	PROD. PEC ALPERA	ALPERA	5	10	683	800	1,650	130	130	150	150	3,708	60	12
STAM. DEL ORO	PROD. PEC ALPERA	GIGANTES	4		258	270	650	70	70	120	120	1,562	60	15
STAM. DEL ORO	AGROP. GAVILAN	EL GAVILAN	4	8	137	173	470	124	124	150	140	1,330	60	15
STAM. DEL ORO	BEATRIZ CARRILLO	LA QUERENCIA	3	6	70	150	125	125	125	100	80	784	57	19
R.O.D.04														
ACAPONETA	PEDRO EXPINOZA J.	EMILIANO	1	2	40	20	20	20	20			123	47	47
R.O.D.05														
TEPIC	FERNANDO FIERROS	EL REFUGIO	5	12	400	400	400	400	400	400	400	2,817	60	12

MUNICIPALITIES	OWNER NAME	FARM NAME	N° OF BOOTHS	BOARS	BREEDING SOWS	LACTATING GILTS	WEANED PIGS	DEVELOPMENT PIGS	GROWTH PIGS	FATTENING PIGS	FINALIZATION ON PIGS	POPULATION	N° OF PIGS SAMPLED PER FARM	N° OF PIGS SAMPLED PER BOOTH
TEPIC	PROD. PEC. ALPERA	LA CONCHITA	5	11	444	489	1,481			404		2,834	60	12
TEPIC	CARLOS FIERROS	SAN JORGE	4	9	140	200	180	70	70	70	60	803	56	14
TEPIC	PETRA GLEZ	PORCICOLA 3 HNO	3	2	45	40	40	35	35	35	35	270	54	18
TEPIC	CANDELARIO RUBIO	SAN ISIDRO	2	2	25	30	30	30	30	25		174	52	26
TEPIC	GUADALUPEAGUILAR	GUADALUPE	2	1	115	15	15	15	15			78	42	21
TEPIC	NICOLÁS PADILLA M.	EL JALICIENCE	1	1	20	20	20					62	39	39
TEPIC	PROD. PEC. ALPERA	EL IZOTE	4	7	356	452	932			108		1,859	60	15
SAN BLAS	ANTONIO RODARTE	MATANCHEN	2	1	13	15	12	20		20		83	44	22
SAN BLAS	MANUEL HDEZ.	SAN JUAN	5	15	850	800	1,200	700	700	500	400	5,170	60	12
SAN BLAS	LUIS M. ARIAS	LA BAJADA	3	3	40	35	35	35	35	30	6	222	51	17
TOTAL			408	163	4,720	5,301	8,919	4,500	4,528	1,982	2,993	35,405	2,277	

a) For the statistical sample size estimation for technologically-advanced operations, Cannon and Roe's equation (1982) Referenced by: Martin-Meek-Willenberg: Epidemiologia Veterinaria,

Principios y Métodos, 1997 was used, considering a 95% confidence level, and a 5% prevalence within the flock

b) The epidemiological sampling must be done in the total 100% of the producing farms, no matter what the purpose of production they are meant for.

c) In the event of unpopulated farms that will in the future be restocked, they will be incorporated to the statistical sampling, obtaining at least 59 samples of the farm.

d) On those farms with complete cycle productions, 80% of the samples should correspond to breeding sows, 10% to boars and another 10% to animals older than 4 months, sampling at least 59 animals per farm.

e) The type of sample for epidemiological surveillance used must be of blood serum

ANIMAL HEALTH GENERAL DEPARTMENT
EPIDEMIOLOGICAL SURVEILLANCE DIRECTION
EPIDEMIOLOGICAL SURVEILLANCE SUBDIRECTION
RISK ANALYSIS UNIT

**STATISTICAL SAMPLE SIZE FOR BACKYARD SWINE PRODUCTION UNITS IN
THE STATE OF NAYARIT, 2003.
CLASSICAL SWINE FEVER AND AUJESKY'S DISEASE**

MUNICIPALITIES	TOTAL BACKYARD SWINE OPERATION UNITS	ACTIVE UNITS	BACKYARD SWINE POPULATION	N° OF UNITS SAMPLED	N° OF PIGS PER UNIT	SAMPLE SIZE
REGIONAL DEVELOPMENT DISTRICT 1						
SANTIAGO	14,100	1,410	1,300	44	5	220
TUXPAN	428	24	560	1	5	5
ROSAMORADA	5,100	765	1,200	16	5	80
RUIZ	3,000	450	800	9	5	45
REGIONAL DEVELOPMENT DISTRICT 2						
COMPOSTELA	8,500	850	1,500	27	5	135
B. BANDERAS	5,571	557	1,450	18	5	90
S. PEDRO LAG	1,100	165	600	3	5	15
REGIONAL DEVELOPMENT DISTRICT 3						
AHUACATLAN	2,200	3330	800	7	5	35
IXTLAN	2,700	540	1,400	8	5	40
A. DE CANAS	1,880	376	1,300	6	5	40
JALA	2,100	315	800	7	5	35
LA YESCA	1,500	300	1,000	5	5	25
STA. M. DEL ORO	2,700	405	1,100	8	5	40
REGIONAL DEVELOPMENT DISTRICT 4						
ACAPONETA	5,140	771	1,400	16	5	80
TECUALA	6,420	770	1,420	20	5	100
HUAJICORI	1,400	210	630	4	5	20
REGIONAL DEVELOPMENT DISTRICT 5						
TEPIC	34,000	3,400	5,500	107	5	535
SAN BLAS	6,300	630	1,000	20	50	100
XALISCO	3,800	380	650	12	5	65
EL NAYAR	3,014	241	600	9	5	45
TOTAL	110,953	13,079	25,010	349		1,750

- For the statistical sample size estimation for backyard swine producing operations, the Cannon and Roe's equation (1982) was used, considering a 97% confidence level, and a 1% prevalence.
- An average of 5 pigs was considered per unit of backyard swine operation in the State of Nayarit, the 100% of pigs had to be sampled in each unit.
- Samples were taken randomly, independently of confinement system used by owners, whether free range or total confinement
- The type of sample must correspond to blood serum